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FUNCTIONAL REQUIREMENTS ANALYSIS
VOL. 2

AMERICAN
MANAGEMENT
SYSTEMS, INC.

FUNCTIONAL REQUIREMENTS ANALYSIS

VOLUME 2 of 2

for the

Bureau of Land Management
ADP Modernization Project

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Appendix B

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Appendix B

Functional Requirements for Lands and Renewable Resources

The requirements for Lands and Renewable Resources are presented on the following pages. Seventeen requirements were identified. Functions which pertain to several programs such as inventorying, were given as one function although inventorying occurs in each land program area. An index of the functions is presented in Figure B-1.

These functional requirements are intended to provide an overview of the processing done by the land programs; they are not intended to be a comprehensive account of all processing. Thus, in the Planning Function the ommission of some plans developed by the lands program staff is intentional as the functional requirements pertain to all plans. Similarly, case processing includes all cases, including the Rights-of-Way and Withdrawals.

Three functions are performed at the Washington Office level: Tracking R&D projects, planning oversight, and program oversight. Two functions are performed at the State level: Processing land cases and maintaining the land title records, (in volumes in the Eastern State Office and on the Master Title Plats in the western states). The remaining 12 functions are performed at the Resource Area office.

Figure B-1. Index of Lands and Renewable Resources Functions

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Track R&D Projects

Part 1: General Information

Associated Program:	Research and Development Projects Management.
User Organizations:	Washington Office Divisions. Division of Lands and Renewable Resources and Division of Resource Management
Owner/Operator/Maintainer:	Resource Sciences Staff (WO-201)
Existing Automated System:	ASPEN/2 Data Base

Part 2: Description of Overall Program, Requirement, and Current Procedures

Resource Sciences is a four person organization whose mission is to coordinate BLM research and development projects submitted by the field office for approval by appropriate WO program area office. The Resource Sciences staff prepare submissions for approval or disapproval by WO and acts as a general internal negotiator between the originators of proposals and the decision levels in the WO. The Resource Science staff receives and sends information on proposed, active and completed projects to technical experts in the Federal government and the private sector. There is no counterpart organization in the field.

Resource Sciences processes about 100 new R&D projects a year; however, the current work load is 250 projects due to a backlog. The general process is to review and summarize the R&D projects, the program office to make decisions concerning appropriate actions, maintain a file on the history of each project including all progress and completion reports and to conduct appropriate evaluations of projects. Project tracking is normally completed in about two years past the completion time.

Projects are sent to Resource Sciences from BLM field offices in the form of a statement of need. These are reviewed by the program offices and either selected for continued work, denied with reason given, or left in a pending category due to lack of funds or because of a conflict between two BLM program areas.

To sometimes help the program office develop project prospectus to better define the project, Resource Science gets expertise from within the government or perhaps from a university. Sometimes during the process of defining the problem, another project similar to the one being proposed is found and used as a solution in place of the proposed R&D project.

In order to help the program office develop a project prospectus to better define the project, the Resource Sciences Staff get expertise from within the government or perhaps from a university. Sometimes during the process of defining the problem, another project similar to the one being proposed is found and used as a solution in place of the proposed R&D project.

Once a project has been approved, Resource Sciences tracks it and generates an annual report of projects in progress. Completed and closed projects are tracked for two or three years or until the final report is written.

Resource Sciences is instrumental in obtaining involvement of both line managers and the technical personnel on projects at the field level. Technical personnel propose projects that are then brought before line managers for their recommendation and decision at the appropriate level of the BLM. Each level, the District, State, Service Center and Washington office, have specified levels of authority to approve the implementation of R&D projects. These levels are dependent upon overall costs and area of application anticipated from the project.

To fully support the Resource Sciences function, BLM needs a system that will:

- Store key date about each R&D project approved and proposed.
- Track R&D projects and provide output and queries in a variety of formats.
- Maintain abstracts of projects which can be accessed by the field offices as well as the Washington office.
- Support electronic transfer of information among all BLM offices, from the Washington office down to the Resource Area level.
- Provide word processing support for correspondence and reports.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Input into the tracking system occurs weekly, however, the peak processing time is during budget preparation. An overnight turnaround would be adequate for this information.

- **Security/privacy:** BLM's Research and Development projects are for use throughout BLM and should be easily accessible to all users. The Resource Science Staff should control all changes to the data.

- **Response time:** The system should provide for easy and convenient use such as same day turnaround of report requests, on-line editing of input data and ad hoc queries. There are no stringent mandatory response time requirements associated with this program.

- **Interfaces:**

  - Electronic mail and bulletin board capabilities to connect with other BLM program areas is desirable.

- **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- Research and development project proposals:

  - BLM processes about 100 to 250 R&D project proposals each year

  - There are approximately 1,000 R&D projects on the current data base and this is growing at about 100 projects a year

  - R&D projects are currently entered into an ASPEN/2 tracking system by the Resource Sciences Staff as they are received.

  - Tracking information is also entered, such as: project approval milestones, closeout.

Major programmatic outputs:

- Report of R&D project abstracts:

  - Report prepared annually for program office review consisting of approximately 100 R&D projects.

- Information for the Annual Report to the National Science Foundation

  - Two to three page automated report listing projects under consideration and development is sent annually.

Use of existing system:

- **Number of users:** Four Resource Sciences staff members, all State Offices, and about 20% of the District offices access the data. BLM estimates access by each State Office once a month. There were 300 requests in 1984 for the annual report on R&D projects.

- o **Amount of use:** Weekly access by Resource Sciences Staff; monthly access by field office users.

- o **Distribution by office:** A synopsis of R&D projects goes to all program offices. Associate State Directors receive a status report twice a year.

Growth factors:

- o Moderate growth expectations; R&D project control is anticipated to become more widely used within BLM.

Part 4: Existing System

Name:	ASPEN/2 data base
Location:	Denver Service Center, Denver, Colorado
Hardware:	Honeywell DPS-8, Televideo 950 terminals
Software:	ASPEN/2
Telecommunications:	BLM Network
Contact:	Ronald Kuhlmann, WO-201

<<< BLM Functional Requirements >>>

Planning Guidance

Part 1: General Information

Associated Program:	Planning and Policy Management
User Organizations:	Planning and Environmental Coordination Office (WD-221); Division of Planning and Environmental Assistance (WD-930)
Owner/Operator/Maintainer:	Planning and Environmental Coordination Office, WO-221
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Planning and Environmental Coordination (P&EC) Office develops planning policy, which includes environmental coordination, inventory coordination, and guidance on socio-economic issues. The focus is on planning policy and environmental coordination. P&EC provides guidance and information to the Field Offices and acts as a liaison with Washington Office program divisions. There are two branches within Planning and Environmental Coordination: the Planning Branch and the Field Support Branch.

The planning process is mandate by Federal Land Policy and Management Act (FLPMA) of 1976 and performed at the Resource Area level. Currently, each of BLM's approximately 165 Resource Areas prepare Resource Management Plans (RMP), which have an 8-10 year life cycle. The entire process is highly decentralized. State directors approve of the plan and the Washington Office resolves protests and provides policy for the plans. New Resource Management Plans are written when new issues created by public concern or by Congress need to be addressed. When this occurs, the new issue information is added to the plan and the old plan is discarded. The plans are printed up in the form of a manual which average about 1/2 to 3/4 of an inch thick. The supporting detailed information for these plans currently exists in the form of maps and overlays which are kept at the Resource Area offices.

Each year, the BLM publishes its planning schedule to advise the public and other government agencies where it intends to start new plans or modify existing plans for the next three years. The public is invited to comment on the proposals and suggest priorities of areas and resource issues to be considered.

BLM leaders at the Washington and State Offices prepare and issue guidance to help local resource managers. This guidance provides the latest information on agency policies for use in planning. It also assures that locally developed plans consider national concerns and priorities as the plans are prepared.

Washington Office Guidance. The Washington Office prepares guidance to provide an overall policy framework for public and resource management, including Resource Management Planning. Guidance comes from BLM's Director in Washington, D.C. and is based on public laws, regulations, Executive Orders and other Presidential or Secretarial documents.

State Director Guidance. BLM State Directors have considerable discretion in determining the extent and degree of planning guidance necessary for the local District and Resource Area managers. The guidance reflects the State Director's coordination and agreements with the Governors' offices and various affected state government agencies. Other aspects of guidance may include:

- Goals for public and resource uses;
- Objectives for specific resource uses, allocations, and designations;
- Priorities for management of resources;
- Specific alternatives to be considered;
- Resource values to be considered; and
- Constraints or thresholds (minimums and maximums) that must be observed in preparing these land use plans.

District Manager Guidance. The District Manager may develop a "District Manager's Concept" which helps focus national and State guidance on plan development within the District.

Resource Area. Conformance to the plan is the responsibility of the Resource Area. No action can be taken concerning BLM land unless it is addressed in the plan. For instance, no land can be sold from a Resource Area unless it has been specified as for sale in the plan. One function of the Washington Office is to see that the various Resource Areas plans include the required items.

The Planning and Environmental Coordination staff of the Washington Office acts as a liaison between the Resource Area and the various program offices in the Washington Office during RMP development and modification.

The National Environmental Policy Act (NEPA) drives environmental issues in the plans. The Planning and Environmental Coordination Office acts as liaison between the Field Offices and the Washington Office in connection with NEPA issues. Based on NEPA, BLM writes an environmental analysis (EA) which states whether the action on the land requires an environmental impact statement (EIS) or can be classified as a categorical exclusion which means that no environmental impact would occur.

An inventory of each Resource Area is needed in order to apply NEPA mandates. The P&EC Coordinates the development of inventories for the planning process. Due to time restrictions this information can be collected rapidly and is not always accurate; also, the collection process is not always planned and sometimes misses the point of the question or is too detailed. For example, the use of recreational vehicles for barren land was studied for all barren land while the need was to study only land within 60 miles of a roadway because these vehicles never got beyond a 60 mile point from a roadway. This land analysis is now done with the use of overlays and maps.

The requirements driving this function are:

- Store information of RMP, EA, EIS and CA under development and status of each one.
- Produce management reports on the information.
- Store information on plan contents, accessible by program or specific subject matter.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Guidance for RMPs, EAs, and EIS is an ongoing process throughout the year.
- **Security/privacy:** Planning guidance information is not confidential; however, the data should be protected from unauthorized use and updating.
- **Response time:** The system should provide for easy, convenient use such as same day turnaround of report requests and online queries. There are no stringent mandatory response time requirements associated with this information.
- **Interfaces:**
  - -- Access to Financial Management System information by program unit is required
  - -- Land inventory information is used
  - -- Excerpts of RMPs with ability to analyze by various categories such as coal, land sale would be useful
  - -- Access to models to predict EIS impacts would be used
  - -- Tracking information on age of plans, number of amendments, etc., would be useful

- **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- Financial management information
- Resource Management Plan information
  - 165 Resource Areas must develop Resource Management Plans and this is being done at a rate of about 20 per year. Each has an 8-10 year life cycle. These need to be tracked and reported on.
- National Environmental Policy Act (NEPA) information
- Memo or correspondence from Field Offices
- Information from outside agencies, Congress, the private sector

Major programatic outputs:

- Instruction memos and correspondence to the Field Offices and correspondence to Congress, other agencies, and the private sector
- Information on plan contents in various formats or ad hoc requests from BLM, the private sector, and Congress.
- Guidance and policy statements on the planning process in the form of memos, studies, and correspondence.

Use of existing system (manual system):

- **Number of users:** There are 11 staff people in the Washington office, and approximately 150 field staff preparing plans each year.
- **Amount of use:** Moderate to light use would be made to both access and report information from the systems.
- **Distribution by office:** Distribution of this information would be to all BLM offices, Washington program offices, the private sector, other Federal agencies, and the Congress.

Growth factors:

- The peak for RMP planning was from 1983-1985 with 24 plans completed in 1985. The load will diminish in 1986 to about 10 plans completed.

- A great emphasis will be placed on planning as law cases start building against current BLM laws and regulations. There are currently 66 protests against RMP and this figure has been as high as 105. There will be a greater need to organize inventories, and to access information quickly. There will be no growth or change in environmental (NEPA) issues.

Part 4: Existing System

Name:	Manual tracking system
Location:	N/A
Hardware:	N/A
Software:	N/A
Telecommunications:	N/A
Contact:	N/A

<<< BLM Functional Requirements >>>

Land Management Oversight

Part 1: General Information

Associated Program: Land Management

User Organizations:

-- Rangeland Resources Division - WO-220
-- Forestry Division - WO-230
-- Wildlife Division - WO-240
-- Wild Horses and Burros Division - WO-250
-- Rights-of-Way Division - WO-330
-- Recreation, Culture, and Wilderness Resources Division - WO-340
-- Alaska Lands Staff - WO-311
-- Division of Lands and Renewable Resources - State Office
-- Division of Resource Management - District Office

Owner/Operator/Maintainer: Information is summary of information collected and the District Office and Resource Area levels in the various programmatic areas.

Existing Automated System: Refer to functions of the Resource Area level of land, range, forest, ownership, wilderness, recreation, cultural resources, conservation, wildlife habitats, and wild horses and burros for systems pertaining to those specific programs.

Part 2: Description of Overall Program, Requirement, and Current Procedures

Land Management Oversight at the Washington BLM program office level consists of: recommending policy; providing guidance to the field office, such as inventory techniques and monitoring procedures; providing program oversight by matching work accomplished to budgetary figures; identifying trends before problems occur; dealing with national issues which result from public outcry or legislation; dealing with outside organizations and other Federal agencies, such as the Fish and Wildlife, Federal conservation agencies, Forestry, and EPA; providing training at the Phoenix training area; providing intragency coordination such as coordinating one BLM program with others; and developing studies to answer legislative mandates and form policy and procedures for the field offices.

The current procedures are to access information both within and outside of BLM either by phone or by correspondence. Statistical information is also obtained from the Public Land Statistics published by the Bureau of Land Management and the ADP systems supporting the program areas. However in many cases, when information is requested from the states it has to be sought down to the District or Resource Area level which detains it by several days.

The State Office program areas also perform studies on current issues such as cost recovery information, setting fees associated with such things as rights-of-way, grazing allotments, or forest timber costs.

The requirements to support this function are:

- Access to performance information by program area, such as how many cases processed, rangeland monitored, burros adopted
- Provide budgetary information for project cost tracking
- Information on inventories and studies being done by program area

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Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The land management oversight functions are performed year around on a fairly steady basis. Extra demand for information could occur during budgetary periods but generally there is a steady year around need for information.
- **Security/privacy:** Land Management oversight information is not confidential, however it should be protected against unauthorized changes or updates.
- **Response time:** The system should provide for easy, convenient use such as same day turnaround on report requests and online, ad hoc queries. There are no stringent mandatory response time requirements associated with this function.
- **Interfaces:**
  - The Washington office has a need for summary information in all program areas.
  - There is also a need for information from outside agencies such as EPA, Soil Conservation Service, Forest Service, and US Geological Survey.
- **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- o Summary information from all BLM program area systems such as Financial Management System, the ORCA or Case Recordation System, the Adopt a Horse System, or the Job Documentation Reporting System.

Major programatic outputs:

- o Output is in the form of correspondence, phone conversations, studies and reports.

Use of existing system:

- o **Number of users:** The Washington program areas offices are comprised of about 500 people, all of whom might access the system.
- o **Amount of use:** The use of program area systems would be moderate; most offices said that they would access the information 2-3 times a week.
- o **Distribution by office:** The distribution of summary information would be to all program areas within the Washington Office.

Growth factors:

- o There were no major growth changes seen in the BLM program offices other than in the area of recreational permits; the Wild Horses and Burros Program will increase over the next 3 years and then decrease. The Wildnerness Program will have heavy use until Congress approves the wildnerness areas and then there will be an increase in wildnerness management information needs. The Rangeland, Forestory, Rights-of-Way, and Wildlife Programs will remain constant over the next 10 years.

Part 4: Existing System

Name: Refer to systems described under Land Management Functions at the Resource Area level.

Land Records Maintenance

Part 1: General Information

Associated Program:	Land Management
User Organizations:	Division of Lands and Renewable Resources - State Office Division of Resource Management - District Office
Owner/Operator/Maintainer:	Division of Lands and Renewable Resources - State Office Division of Resource Management - District Office
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

Land records consist of more than 7.5 million ownership titles covering over 300 million acres of the present or former public domain lands. Over 5 million titled documents are stored and maintained at BLM's Eastern States Office, Alexandria, Virginia. They are the responsibility of the Division of Lands and Renewable Resources. These records date back to the beginning of the nation's westward expansion and many of them, such as field notes, survey plats, patented records, tract books and case files, are in continual use. Almost every land action or mineral leasing function in BLM requires reference to these records in order to certify U.S. ownership and BLM management responsibility.

Jurisdiction over the records differs from State to State. A State Office organization study dated October 1981 specified that land title status records would be housed in the Lands and Minerals operations group. This separates the information into two different program areas. The Organization of Guidance to the Field separates automated systems from manual record systems, and centralized records from decentralized records. General paperwork/management records responsibilities are under Administration and the resource program records responsibilities are split between lands and minerals program areas.

Until the 1950's the Bureau maintained the old General Land Office record keeping system. This system comprised the cadastral survey plats and field notes, land and mineral tract books, land and mineral conveyance documents (patent and deeds), and related land and mineral case files. These records were and are the primary link in the chain of title to all real estate and mineral estate (private and public) in the public domain States. The location of documents became a cumbersome manual process as more and more records were created. They were not cross indexed by any system or in a logical way.

In the 1950's the patent and other controlled documents were indexed, first in legal land description sequence, then by master title plat, then historically. This integrated the old General Land Office record information taken from survey plats and tract book entries into an easy-to-use visual and narrative display of current and historic status of title information. Each Western State, excluding portions of Alaska, North and South Dakota, Nebraska and Kansas, was phased into this new system over a 20 year period. As a result the Western States were able to retire the old General Land Office records from daily use. They currently get title information from the Master Title Plats.

The Eastern States Office did not have enough surface management responsibility to warrant a new records system although they retain the oldest of the Bureau's records. The volume of requests for Eastern State Office patents constitutes a significant workload, approximately 1000 per month. This information is obtained from the original Land Title Records stored in the ESO in Alexandria.

Three different types of land records are stored at the ESO:

- o Survey field notes and township plats for the East's 13 public land states. Field notes are prepared by a surveyer and describe the survey performed, the names of settlers living in the survey area and a variety of descriptions such as land formation, climate, soil, plant and animal life. These notes date from 1785, when an ordinance established the rectangular survey system and authorized the Treasury Department to sell public lands for revenue. The field notes are filed by State in 1,745 bound volumes. Plats filed by State, township, and range, number up to 30,000 volumes.

- o Patent documents filling 8,978 bound volumes give information on transfer of patents and titles of public domain land to private citizens. Some patents issued before 1908 are filed by State and name of the land office where the certificate originated. Others are filed according to the Act of Congress under which they were issued regardless of the geographic location. Since 1908 all patents have been assigned a consecutive serial number and are filed numerically.

- o General Land Office tract books contain records of patents and other statements of titles such as railroad grants, swamp grants, school grants, Indian allotments, and private land claims. There are a total of 1,582 General Land Office tract books located at the Eastern State Office. These have been maintained since 1800 in local land offices and served as central reference sources of all transactions involving public lands. An additional 2,325 tract books covering the Western public land States are also filed at the Eastern States Office on microfilm. For day-to-day management the Western State Offices use the master title plat system instead of tract books.

Each year the Eastern States Office fills 20,000 requests for certified photostat copies of patents and other land records. Most request come from title attorneys and abstract companies who before issuing a title on a particular parcel of land want to be certain that the title was passed from Federal government. Patent records also are involved in mineral exploration and development title rights; frequently these rights were reserved to the U.S. government rather than conveyed with a title to the land. Many requests come from the southern states where county courthouse were burned during the civil war loosing many title records. Records are also of value in historical and genealogical research.

The procedures taken at ESO to answer requests for information on copies of land patents are as follows:

- o Identify pertinent tract book from township index
- o Pull tract book identifying type of conveyance.
- o If pre-1908 conveyance and patent volume and page are not shown then go to General Land Office records index.
- o Pull patent volume and search for patent.
- o If patent cannot be found call National Archives and Records Administration (NARA) for volume and page. Land entry files in the custody of NARA contains volume and page. Obtain patent data from NARA.
- o Otherwise pull patent volume and verify that it is the document requested, examine the patent for accuracy. If the patent is perfect prepare the patent page marker which is a slip with the patent number, land office, volume and page number.
- o If the patent has omissions or is unsigned prepare a status report (Form 1810) reflecting the problem and send it to the Land Ajudication Branch.
- o Deliver patent volume to photocopy operator.
- o Photocopy operator reproduces the copy and returns the patent volume to the shelf. Legal clerk matches patent with request to verify that it is the document requested and mails the patent to the requestor.

In the Western States this information can be obtained either from the Master Titles Plat or from microfilmed documents of title information.

Regulations require that payment be received before the requested material is sent out. To help expidite orders an advanced deposit account can be established from which fees can be deducted and the material furnished as it is ordered. Automated statements are sent after the order showing adjusted balances.

The requirements needed to support this function are:

- A file of Land Title record information available as fiche or on-line
- A file to record fees required to reproduce information requested from the Land Title records.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Land records are required daily by BLM and the public.
- **Security/privacy:** None
- **Response time:** Should provide for easy, convenient use such as same day turnaround of report requests, on-line editing of input data, and on-line queries.
- **Interfaces:** Land Title information is required by all BLM programs.
- **Reliability:** Normal business standards for reliability are satisfactory

Major programmatic inputs:

- Requests for 1,000 land records per month
- Record of fees paid for copies

Major programatic outputs:

- Copies of 1,000 land records per month sent to requestor

Use of existing system:

- **Number of users:** BLM in ESO Division of Lands and Renewable Resources now employs about 8 people in its lands records function. (In the Western States they could be in the State office or at the District level where such information resides on microfiche in the Administrative Records Office.)
- **Amount of use:** The user of land records information is heavy; it is the basis of all land actions within BLM.
- **Distribution by office:** Land office records reside at the Eastern State Office, and at Western State and District offices.

Growth factors:

- o No major changes will occur in land patent records other than in Alaska where land is still being conveyed to private citizens. The use of land patent records will probably remaining constant.

Part 4: Existing System

Name:	Manual System
Location:	N/A
Hardware:	N/A
Software:	N/A
Telecommunications:	N/A
Contact:	N/A

<<< BLM Functional Requirements >>>

Process Land Cases

Part 1: General Information

Associated Program:	Land Management
User Organizations:	-- Division of Lands and Renewable Resources (SO) -- Division of Resource Management (DO) -- Resource Areas
Owner/Operator/Maintainer:	Division of Lands and Renewable Resources
Existing Automated System:	ORCA or Case Recordation (ALMRS)

Part 2: Description of Overall Program, Requirement, and Current Procedures

BLM processes land action cases in order to grant various land uses to people who petition for them, or to enable BLM to use land in a specific way. These land action cases include petition applications for rights-of-way, archaeological surveys, withdrawals, grazing permits, and recreational use. It also includes nominations for proposed sales and exchanges of BLM land.

A land action case can begin with an action from outside of BLM or within BLM. A land action petition can be submitted at the Resource Area, District Office, or State Office depending upon the type of action that is being submitted. For land exchange or sale the process usually begins with a preapplication discussion. All exchange or sale applications are filed by the state or the individual petitioning for BLM land use at the Resource Area or District Office. Nominations for land exchange or sale, withdrawals, conveyance of mineral interests, or rights-of-way are processed similarly; the main difference is that the public review period occurs only once and is a 45 day period; two 30 day periods are currently used to process the recreation and agricultural use actions.

- **Initial receipt.** When the petition is received, it is assigned a serial number and logged in to either the ORCA system or the Case Recordation System. A case file is assembled including the petition, the serial number, date, time, and fee paid at time of application. At the same time, the fee is logged in to a separate system to be submitted to the Financial Management System. This money is **entered a third time** to the MMS Royalty System PAAS.

- **Adjudication.** The ajudication process occurs next. This is a review of the application to see that all necessary information and legal descriptions are included. If problems in the application can not be resolved at this time, the application is rejected.

- **Field processing.** The case is then sent to the Resource Area for field processing where its suitability to the proposed land use is examined. First, the Resource Management Plan is searched to see if that piece of land could be used in the proposed way. Then a field investigation could take place for an on- the-site look at the land. If the land is not included in the Resource Management Plan, an environmental study could be done at that point and other conflicting uses of the land investigated. Next, a Land Report is compiled by the reality specialist at the Resource Area.

- **State processing.** Land classification is the next step. The State Director receives the case and, depending upon the type of case, either issues a Proposed Initial Classification Decision or a Notice of Reality Action (NORA). In each case, the next step is to present the land action to the public either through publishing it in the Federal Register and in public newspapers or by sending the decision to all interested parties. Comments must be received either in 30 days or in 45 days, depending upon the type of action. The State Director then responds to any protests and can decide whether to abandon the case, modify it, or send it on as it currently is. In the case of a recreation or agricultural use, the initial classification decision is sent to Washington for another 30 day period of public comment. For a NORA type review, at the end of 45 days the decision can be made on the land use. For a recreational or agricultural land use, conflicts would be decided by the Secretary of the Department of the Interior.

- **Case approval.** The state then sends the case to the District which has ultimate decision and can approve or disapprove of the Director's action. Disapproval causes the case to be closed. Approval of land use results in a lease or a grant being given for land use. Approval of a sale or exchange results in preparation of a Final Certificate and Patent.

- **Case monitoring.** Once land use is granted, it is followed up by BLM either annually or on a periodic schedule to see that the land is being used as was proposed. For instance, desert land entry can be proven within 4 years and no further follow up is required. At that point, a patent for the land can be issued based on proof of proper use. The patent conveys the title for the land but is usually only for the surface of the land; BLM usually retains the mineral rights. Patents are issued by the State BLM Offices.

- **Withdrawal exception to above process.** One exception to the previous steps is in the case of Withdrawals. A Withdrawal sets land aside from multiple use and provides for a specific use for example, for a military base. An additional step of preparing a Public Land Order (PLO) at the State level is required for a Withdrawal. This occurs when the land report is sent up to the State Office for approval after the field work has been done on the case. The Public Land Order with a summary is sent to the Washington Office for Secretary of Interior approval. Sometimes these cases can even require Congressional approval.

To support this function, BLM needs an information system that will:

- Store case information giving case type, processing performed, location of case folders, and other information pertinent to case processing
- Support BLM personnel in reviewing and approving various cases
- Produce management reports and support on-line queries about types and numbers of cases being processed or locate one specific case for review.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Land action cases occur fairly evenly throughout the year. There is a peak season for mining claims however, from September through October when proof of $100 annual improvements must be submitted by each operator.

- **Security/privacy:** Land action cases contain confidential information which requires security or privacy. Also the records should be protected against inaccurate input or changes by parties other than those maintaining the records.

- **Response time:** Most land action cases require an easy and convenient access to information such as same day turnaround of report requests, online editing of inputs, and online ad hoc requests for information. There are no stringent mandatory response time requirements associated with land action cases.

- o **Interfaces:**
  - -- Legal description and land characteristics data should be available to the land action processor.
  - -- Case processors need access to basic lease file data.
  - -- Case processors need access to the contents of the Resource Management Plan, the Environmental Impact Statement, or the Environmental Assessment (EA).
  - -- Land action cases require the use of maps and overlays to show the relationship of the other land uses to the land being proposed for action.
- o **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- o Land action cases:
  - -- BLM processes approximately 41,500 land action cases a year.
  - -- There are no major variations in the number of land cases processed each month.
  - -- The land action cases are completed by BLM employees who document and track the land action cases through the process described above.
  - -- Land action cases consist of a folder of information, and a summary page.
  - -- The attached chart and Figure __ identifies the land action cases by case type conducted in 1985 by the BLM Field Offices.

Major programmatic outputs:

- o Case summary page
- o Statistics for the annual report
- o Land patents granted
- o Leases and permits granted

Use of existing system:

- o **Number of users:** BLM charges 5,011 work months to its Lands and Renewable Resources and Lands Management case processing function. These hours are charged at the State, District, and Resource Area Offices.

- **Amount of use:** The use of ORCA or case recordation is moderate. The average use of the system is several times a day per individual. The length of time that it is used varies depending upon the nature of the case. There are no peaks or valleys in the time of use.
- **Distribution by office:** The distribution of land action cases is between the Resource Area, the Division of Resource Management of the District Office, and the Division of Lands and Renewable Resources at the State Office, and the various program areas at the Washington Office level.
- **Refer to Figure B-1 for sizing information**

Growth factors:

- A growth of 35-50% is expected in the recreational program, issuance of archaeological permits will probably increase, but all other case actions will probably remain the same throughout the next 10 years with decreases in land sales and exchanges. The overall prospects for land action cases will probably remain constant since the variations will increase in some program areas and decrease in other leaving a constant pattern of land action case processing.

Part 4: Existing System

Name:	ORCA
Location:	State Offices currently exists at eight of the 12 states
Hardware:	Honeywell Level 6 Minicomputer
Software:	Aspen/2
Telecommunications:	BLM Network
Contact:	Paul Vetterick - Oregon State Office Associate State Director, and William Seutter - Oregon State Office Computer Specialist, and Todd Stille - Oregon State Office Computer Specialist

Figure B-1. Land cases are processed at all three field office levels.

Land Action Cases* - by Type

288	Recreation and Public Purposes
171	Exchanges
935	Applications for desert land use
52	PLO opening withdrawn land
20	Withdrawals
156	Easements
6,000	Special recreation permits
5,184	Rights of way
19	CMA for land use, (universities, states, local governments)
48	Designated critical to environmental concern
6	Outstanding Natural Areas
320	National Register History Places
100	Archeological permits
780	WSA - Wilderness Study Areas
27	CMA w/ livestock operators
173	AMP's
27,213	Grazing permits
41,492	Cases per year

*Source: Summarized from "Managing the Nation's Public Lands, Fiscal Year 1984"

Name:	Case Recordation
Location:	Denver Service Center (DSC), Denver, Colorado
Hardware:	Honeywell DPS-8
Software:	Aspen/2
Telecommunications:	BLM Network

<<< BLM Functional Requirements >>>

Planning

Part 1: General Information

Associated Program:	BLM Planning
User Organizations:	-- Division of Planning and Environmental Assistance (DO) -- Resource Areas
Owner/Operator/Maintainer:	Division of Planning and Environmental Assistance (DO) Resource Areas
Existing Automated System:	GIS - in some States Various ASPEN/2 Databases

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Part 2: Description of Overall Program, Requirement, and Current Procedures

The BLM Planning Program involves the preparation of a variety of plans, such as the Resource Management Plan (RMP), Environmental Impact Statements (EIS), Environmental Analyses (EA).

RMPs are generally Resource Area-wide in scope, they allocate resources and set resource condition objectives for all resource programs, and set the stage for subsequent resource-specific activity plans such as for coal, oil and gas, wildlife habitat, fire management, etc.). Other BLM plans such as Allotment Management Plans (AMP), and Wildlife Habitat Plans (WHP) are based on RMPs for the affected area.

The RMP establishes restrictive, limited or exclusive land use, such as identification of land suitable for transfer or sale or identification of areas of critical environmental concern. The Environmental Impact Statement is integrated with the RMP planning process and the results may be presented in one document. The RMP also specifies allowable land resource uses either singly on in combination and minimum or maximum levels of production to be maintained, such as areas suitable for coal leasing, or the number of wild horses to be maintained in a given area.

The Resource Management Plan:

- Sets conditioned goals and objectives for land use such as a decision to improve the condition of the deer habitat to a certain level.
- Sets forth program constraints and general management practices that affect management actions such as social and economic conditions or state air quality standards.
- Identifies areas to be covered by more detailed and specific activity plans, such as Habitat Management plans for wildlife.
- Specifies actions necessary to achieve specific goals and objectives such as fire management, insect damage control, the general transportation system required for access, general cadastral survey or property line identification needs, withdrawals or land use restrictions, and other reality actions such as classification of lands for sale or transfer.
- Sets up a sequence of actions required upon which other actions may be pending such as the need to obtain water rights before developing water projects for wild horse herds.
- Specifies standards for monitoring or evaluating the plan to determine the effectiveness or if the need for an amendment or revision exists such as determining that soil sample studies are needed every two years to monitor the progress in a critical, erosion prone watershed.

The requirement for an RMP is specified in the Federal Land Policy and Management Act of 1976 (FLPMA). Plan development has been organized into nine separate actions some of which can be done currently. There are also situations where a manager can supplement previous work for some of the actions. One stipulation for the plan is that the interested members of the public and other government agencies may participate in development of the RMP. A notice of intent to prepare an RMP is published in the local newspapers and in other appropriate media such as in the Federal Register.

The nine actions in developing an RMP are as follows:

- Identify issues
- Develop planning criteria
- Collect inventory information
- Analyze the management situation
- Formulate alternatives
- Estimate the affects of the alternatives
- Select a preferred alternative

- Select a plan
- Monitor and evaluate the plan.

After the plan has been selected there is a protest period in which interested public and government agencies can comment on the plan.

Plans dealing with natural resources require periodic maintenance and are sometimes changed. There are three ways in which this can be done:

- Maintenance - minor changes -- such as refining, constraining, or documenting previously approved decisions -- is called maintenance. This cannot expand the scope of the resources used or change the terms or conditions of the plan. Since this is very limited it does not required public participation or affect the environmental documents.
- Amendment - initiated by the need to consider monitoring and evaluation findings, new data, new or revised policy, or a change of circumstances. This requires public participation and may involve changing the environmental documents.
- Revision - if the changes affect major portions of the Plan then a complete revision may be necessary. Revisions require that all actions for preparing an RMP should be taken, including a full scale public participation.

Resource Management Plans can be developed at the District or the Resource Area; this varies from State to State. In a guide to Resource Management Planning on public lands, it is stated that the Resource Area manager prepares, implements, and monitors the Resource Management Plan, the District manager supervisors the RMP and provides quality control and provides budget and staff support to the Resource Area for the effort. State Directors approve Resource Management Plans, publish and file the related Environmental Impact Statement with EPA, and also give guidance and control quality of the planning. The BLM Director assumes overall responsibility for the Bureau planning, issues national guidance and develops procedures and sets budget priorities. During our interviews we found Resource Management Plans being developed at the Resource Area and also at the District by task forces convened for the development.

RMP development takes about two years. People in various program specialties develop inventories and studies indicating the presence and the requirements of a resource for the land. Much of this information is developed in the form of maps of the land and overlays showing the different resources which exist on that land. In some cases these themes have been developed electronically using the GIS, MOSS and the INFOSEN database.

To support this function, BLM needs an information system that will provide:

- Software to manipulate geographic information or spatially related data in a manner that it can be organized, retrieved, and analyzed.

- Files of land description information
- Files of land characteristics information or themes, subjects, attributes and items
- Graphic input and output
- Themes to be overlayed
- Measured areas to be displayed and saved for further use

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The development of RMPs is scheduled in the Annual Work Plan for about a 2 year time span. Within BLM there is an ongoing development process but these occur in different States and different Resource Areas; the need for support would vary by area from year to year depending Resource Management Development was proposed for that area or not. The same conditions would apply to other plans such as the Allotment Management Plan or Wildlife Habitat Plan.
- **Security/privacy:** Planning data is public domain information, however, this information should be protected from unauthorized updates or changes.
- **Response time:** Planning information should have same day turnaround for report requests, on-line editing for input data, and on-line query capability. There are no stringent mandatory response time requirements with planning but information should be readily available.
- **Interfaces:**
  - Legal description and land characterization data must be available
  - Information on inventories for that parcel of land should be available to show land characteristics
  - Case recordation information would be useful to show actions currently in process on or near the land
  - Use of economic demographic models developed by universities in the area would be helpful
  - Use of information from other sources such as Fish and Wildlife, Forest Service and EPA would be useful

  - Cadastral survey information would be useful to provide research into the land boundaries if necessary.

- **Reliability:** Normal business standards for reliability are satisfactory

Major programmatic inputs:

- Resource Management Plan:
  - Inventories and studies of land
  - Public comments
  - Statistics such as demographics, wildlife populations, leases and permits on the land.

Major programmatic outputs:

- Plans such as the RMP, AMP, WHP, etc. About 20 RMP are developed each year. Other planning estimates were gathered in work months: Range employs about 69 people in planning; Forestry estimates 6.3% of its work months go to planning; Wildlife devotes 12% of its work months to planning.

Use of existing system: (GIS):

- **Number of users:** BLM employed about 190 field office personnel in its RMP planning process in 1985. This number was estimated from the number of plans being developed in 1985 which was 27 times 7 which was the number of people we generally found working on a Resource Management Plan during the interview process. This was checked with the Washington Field office support Branch in Planning and Environmental Coordination and seemed as accurate as possible.

  No estimates are currently available through the Washington Office on how many people are working on other plans.

- **Amount of use:** The use of GIS during and after resource planning process will be moderate but the data stored is very CPU intensive. The use would be local and would not generally develop peaks or valleys.

- **Distribution by office:** The distribution of GIS use corresponds to the RMPs under development or existing. The system resides in District offices.

- Refer to Figure B-2 for sizing information

Figure B-2 - The following plans are a sample of those developed by BLM.

Work hours spend planning on by land and renewable resource programs* are:

All Programs	Percent	Resource Management Plans
Range	11%	Allotment Management Plans
Forestry	6%	Allowable Cut Plan Annual Sale Plan
Wildlife	12%	Habitat Management Plan
Recreation	11%	Recreation Activity Plan Recreation Area Management Plan
Culture	5%	

Source: Washington program offices

* Planning and environment analysis are functions that transcend organizational boundaries in the BLM, and are performed to some degree by all resource programs in the Bureau: such as Energy and Minerals, Lands and Renewables, and Fire. While the staffs responsible for coordinating the planning and environment analysis functions in the BLM are located administratively under Lands and Renewable Resources at the present time, and functions are performed throughout the BLM.

Use of existing system: (SageRam):

- o **Number of users:** BLM now employs about 69 people annually in the development of Allotment Management Plans (AMP). This figure was derived from the total number of range conservationists in BLM x 11% which is the estimated percent of time spent in planning.
- o **Amount of use:** The use of SageRam is moderate and will vary from State to State.
- o **Distribution by office:** The distribution of SageRam corresponds to the development of AMPs at the Resource Area level.

Use of existing system: (Threatend and Endagered Species - T&E):

- o **Number of users:** BLM now employs about 33 people in its Wildlife planning effort. This number is based on a total of 280 people employed in Wildlife, multiplied by 12% of time spent on planning. The number and location of people varies according to where the plans are written.
- o **Amount of use:** The use of T&E systems is light. Used about 2 or 3 times a week.
- o **Distribution by office:** The distribution of the T&E system corresponds to the development of wildlife management plans in the District and Resource Area offices.

Use of existing system: (Integrated Habitat Inventory Classification System - IHICS)

- o **Number of Users:** The number of users varies according to the Wildlife Management Plans which are being developed.
- o **Amount of Use:** The use of this system is light and depends upon the amount of work being done on Wildlife Habitat Planning.
- o **Distribution by office:** The distribution of IHICS is at the District office and Resource Area level.

Use of existing system: (Riparian Aquatic Inventory Data Storage - RAIDS) being developed and therefore no useage has yet been established.

Use of existing system: (Trends in Habitat Conditions Monitoring System - THCMS) This system is being developed and currently no useage information is available.

Growth factors:

- o The development of BLM RMPs is a planned process; in 1984 there were 11 RMPs developed and 25 Management Framework Plans (MFP). The last three MFPs were completed in 1984; some have been amended since then but none developed.

Part 4: Existing System

Name:	Geograhical Information System (GIS)
Location:	Located in various States some of which are: Grand Junction, Colorado, Klamath Falls Resource Area, Oregon.
Hardware:	Runs under variety of hardware, primarily Tektronics terminals and Data General 350 or 250 minicomputers
Software:	MOSS and INFOSEN database, Fortran based
Contact:	Steven Moore, Grand Junction District Office, Colorado

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Existing System:

Name:	SageRam
Location:	Denver Service Center, Denver Colorado
Hardware:	Honeywell DPS-8
Software:	Fortran
Telecommunications:	BLM Network
Contact:	Buck West (YA-470)

Existing System:

Name: Threatened and Endangered Species

Location: Denver Service Center, Denver, Colorado

Hardware: Honeywell DPS-8

Software: ASPEN/2

Telecommunications: BLM Network

Existing Systems:

Name: Integrated Habitat Inventory Classification System (IHICS)

Location: Denver Service Center, Denver, Colorado

Hardware: Honeywell DPS-8

Software: COBOL, APL, TEC, ASPEN/2

Telecommunications: BLM Network

Contact: Larry Peterson (YA-470)

<<< BLM Functional Requirements >>>

Grazing Permit and Billing

Part 1: General Information

Associated Program:	Range Management
User Organizations:	-- Division of Lands and Renewable Resources (SO) -- Division of Resource Management (DO) -- Resource Areas
Owner/Operator/Maintainer:	Resource Areas
Existing Automated System:	Range Management Automated System (RMAS)

Part 2: Description of Overall Program, Requirement, and Current Procedures

BLM grants leases and permits for grazing land. Leases are designated as Section 15 under the Taylor Grazing Act and permits are designated as Section 3. Leases are up for grabs because they are outside of grazing districts; permits cover the larger grazing lands which are "almost inherited" by adjacent ranchers. The permits are retained year after year and do not have to be renewed whereas leases are obtained on a yearly basis.

Leases and Permits for land grazing are submitted to the Resource Area Office and processed there. Operators can stop by the Bureau RA Office with a load of livestock on the way out to the public land and request a lease and pay on the spot. There's also a individual free-use permit under Section 5 of the Act which allows individuals free-use grazing.

On a yearly basis, a range conservationist determines the animal unit months (AUM) with each grazing land operator. He determines when the grazing season can begin and multiplies the AUM by the grazing months by the grazing fee to determine what the bill should be for that operator.

Billing takes 30-45 days and the operators should receive their bills 30 days before they have to pay it. Payment is due before grazing can begin. The current procedure for submitting grazing bill information is for a range conservationist at the Resource Area to fill out a form and send it to the Denver Service Center. The Denver Service Center enters the information; RMAS requires four forms to input information.

The RMAS system prints out permits and bills; the bills are split out by Resource Area and mailed to them from DSC.

The problems with the RMAS system are:

o Billing usually starts in April but the system is set up for a March start date.

o Data is collected at the Resource Area but entered at the Denver Service Center.

o Billing information changes frequently (due to changes in the weather or when the animals can start to graze) and so the system is continuously being updated with new information; but the turnaround is so slow that it is hard to get bills out on time. Some Resource Areas actually generate bills manually and do not use the system. There is also a need to issue a grazing bill upon request; the Bureau has adopted a policy of providing this service to the public but RAMS cannot provide bills on-line.

o RMAS is very cumbersome and requires several input forms to accomplish a single task such as cancelling a grazing bill. The data in the system is duplicated over and over several times taking up considerable space and resulting in inconsistencies from one source to the next. Because of slow turnaround time to alter the data in the system, much of the information is out-of-date and not current enough for field use.

RMAS is updated once a week by batch at the Denver Service Center. Output is delivered to the Level- 6 computer at the State Office where there is the option either to print the information and mail it out or route the reports back to the District Office. At present, six States are routing the information to the District Office.

To support this function; BLM needs an information system that will:

o Store operator information such as AUMs, land location, begin and end dates of grazing period and other information critical to producting grazing bills.

o Generate grazing bills on-line to the Resource Area.

o Have on-line edits and updates to allow for rapid data entry and correction.

o Generate management reports and ad hoc query lists.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Grazing bills need to be generated upon request. The peak period for this would be in the March and April timeframe, however, billing can last all summer long as sheep herders receive multiple bills throughout the grazing season.

- **Security/privacy:** Grazing bill information is not confidential however the information should be protected against unauthorized changes or updates.

- **Response time:** RAMS needs on-line edits to get grazing changes into the system as they occur. There is an increasing need for a 30 minute response time for generating grazing bills to support the ad hoc leases.

- **Interfaces:** The grazing and operator information interfaces with the Financial Management System, and also updates the Public Land Statistics.

- **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- Lease and permit information by operator

  - RMAS processes 25,000-180,000 input characters per week and produces from 1,000-10,000 pages of output per week.

  - Data entry requires from 1-10 key entry personnel per week to input information off the forms which is generated at the Resource Area level.

  - Up to four forms are used to input this information into RMAS.

Major programatic outputs:

- Grazing bills

  - Up to about 20,000 bills are generated by the system annually collecting over $15 million.

  - Statistics are input to the Public Land Statistics report annually.

  - Financial information is transmitted to the Financial Management System each month.

-- Error correction reports are generated each week and transmitted to the State Office.

-- Output documents are either routed to the State Office on the Level 6 or are printed at DSC and separated and mailed to the appropriate District or Resource Area.

Use of existing system:

- **Number of users:** BLM now employs about 625 people in its Rangeland Program with about 590 of these at the District and Resource Area level. This staff will be the primary user of RMAS information, however, State and Washington Offices would also access the summary information on an ad hoc basis.

- **Amount of use:** The use of the RMAS system is moderate; it is estimated to take from 1-7 hours per week at the field office level to submit and input the data files under the current form data entry process. However, support for the system is very labor-intensive at DSC, requiring up to 10 key entry personnel, 1-2 computer operators, 2 full-time user representatives, and 1-2 programmers.

- **Distribution by office:** The distribution of grazing bill information is primarily to the Resource Areas. However, the State Office, Division of Lands and Renewable Resources and the District Division of Resource Management as well as the Washington Office Rangeland Division would require summary information from the system.

- **Refer to Figure B-3 for sizing information**

Growth factors:

- BLM expects no major changes in the grazing lease/permit program in the next 10 years. The only changes that may occur are in the grazing fees which will not affect the sizing of the system.

Part 4: Existing System

Name:	Range Management Automated System (RMAS)
Location:	Denver Service Center (DSC), Denver, Colorado
Hardware:	Honeywell DPS-8, Tanberg terminals
Software:	COBOL

Figure B-3. BLM processes billing for about 20,600 grazing operators annually

Grazing permits in force on grazing district (Sec 3.) lands
as of September 30, 1984 (Permits)

State	Operators	Acres	AUM's	Revenue Collected
Arizona	490	10,170,374	489,865	$ 698,055
California	277	5,069,612	349,114	155,651
Colorado	1,337	7,543,923	671,811	581,691
Idaho	2,045	14,949,197	1,931,715	1,533,475
Montana	2,790	6,245,441	1,029,200	992,618
Nebraska	2	2,442	259	0
Nevada	687	47,381,464	2,861,671	2,585,083
New Mexico	1,729	11,435,450	1,706,844	1,695,088
Oregon	787	13,492,741	1,065,890	1,232,799
Utah	1,870	22,614,454	1,450,207	1,375,035
Wyoming	1,039	17,963,321	2,071,697	1,546,609
Total	13,053	156,868,419	13,583,273	12,396,104

Source: Range Management Automated System, Bureau of Land Management - Public Land Statistics - 1984

Grazing leases in force on grazing lease (Sec. 15) lands
as of September 30, 1984 (Leases)

State	Operators	Acres	AUM's	Revenue Collected
Arizona	432	1,442,688	151,470	$ 325,176
California	593	4,472,055	187,338	179,302
Colorado	494	501,368	53,065	63,780
Idaho	601	327,008	40,905	47,585
Kansas	1,243	1,197,270	162,405	225,237
Nebraska	39	3,147	1,257	1,597
Nevada	31	4,558,723	85,972	53,858
New Mexico	897	1,323,841	276,331	309,217
North Dakota	100	53,416	9,718	13,000
Oklahoma	11	987	475	489
Oregon (public domain lands)	551	639,717	59,122	65,983
South Dakota	454	274,132	74,242	101,893
Washington	390	229,355	29,744	38,758
Wyoming	1,708	3,350,484	474,948	622,639
Total	7,550	18,374,831	1,607,116	2,048,688

Source: Range Management Automated System, Bureau of Land Management - Public Land Statistics - 1984

Telecommunications: BLM Network

Contact: Willie Peterson, WO-930

<<< BLM Functional Requirements >>>

Rangeland Monitoring

Part 1: General Information

Associated Program:	Range Management
User Organizations:	Resource Areas Division of Lands and Renewable Resources (State Office) Division of Resource Management (District Office)
Owner/Operator/Maintainer:	Resource Areas
Existing Automated System:	SAGERAM Some states use locally implemented Aspen data base to track and schedule range and wildlife studies (Montana)

Part 2: Description of Overall Program, Requirement, and Current Procedures

The first step of rangeland monitoring is to conduct trend studies. These are conducted as frequently as needed but generally every 3 to 5 years. Trend studies precede development of an Allotment Management Plan or changing management on an allotment or in wildlife habitat or herd management for watershed areas. This is to ensure that there is a record of the resource situation prior to changes in management. Studies are documented on a series of forms. There are 8 trend study methods which have been documented in a rangeland monitoring trend studies manual: the photo plot method, the commodity structure analysis method, the Daubenmire method, the pace frequently method, the quadrat frequency method, the nested frequently method, the line intercept method, and the step/point transect method.

Another method of monitoring rangeland is with actual use studies which are done annually. There are a variety of ways of collecting actual use data. Information can be gathered from the livestock operator where there is confidence in the livestock operator and mutual trust. Other methods are: requesting the actual use data; actual use spot-checks; Forest Service counts -- the Forest Service frequently counts livestock being moved directly onto National Forests from the operator's owned or controlled land; ground counts by actually going among the animals and counting them; aerial counts where information can be gathered from the air; aerial photographs; and marking animals with a dye or a bleach so they can be counted easily from a distance or tagging animals for the same purpose.

Allotment Management Plans are the documents which prescribe the manner and the extent to which livestock grazing is conducted. These are generally kept in a folder by the range conservationist at the Resource Area level and consists of text, a diary of follow-up and use, a plot of improvements and grazing patterns, and specific arrangements for consultation and coordination with the operators. New AMPs must be approved and implemented when an Environmental Impact Statement has been prepared for a livestock grazing program in the area. All grazing permits and leases incorporating AMPs contain normal operation terms such as the numbers of livestock, the periods of use, and the Animal Unit Months (AUM) grazed during the grazing fee year.

Coorperative management agreements are part of grazing management. This is a formal, written agreement between BLM and the permitee or leasee that recognizes the operator as a steward of the allotment. There is a periodic evaluation of the operator's performance based on these agreements. The operators of a CMA may be operating under an Allotment Management Plan but BLM generally gives the operator the opportunity to exercise management flexibility. Corporate Management Plans have a tenure of 10 years and may be renewed at the discretion of the authorizing officer.

Range improvements are made based on land use plans which identify guidance for the objectives of resource management and improvement actions. Rangeland improvements must be authorized either by a corporative agreement for range improvements or by a range improvement permit. Removal of range improvements must also be authorized. These improvements may be required by BLM in order to meet the terms and conditions of a lease or permit agreement. Maintenance responsibilities for range improvements are assigned to the primary beneficiary. Fifty percent of all grazing fees are credited to a separate account in the Treasury for a range betterment fund and these funds are used for rehabilitation, protection, and improvement of the public lands. These funds are distributed to the Districts in proportion to the grazing fees collected in that District.

All of this information is the sole responsibility of the Resource Area, which at this point provides all of the information manually for their grazing allotments.

To support this function, BLM needs an information system that will:

- o Store information on operators, such as location of land, management agreements, land condition, improvements made, improvements needed.
- o Produce management reports and ad hoc query responses.
- o Provide cost-benefit analysis on rangeland improvements.
- o Provide a database of vegetation, soil, water and other range resources for research and analysis in connection with range management policies.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The rangeland monitoring program is performed generally during the summer months from March through September. There are no stringent deadlines for this function, however.

- **Security/privacy:** Rangeland monitoring information is not confidential, however, the information should be protected against unauthorized changes or updates.

- **Response time:** Most rangeland monitoring activities can be predicted in advance. The system should provide for easy, convenient use such as same day turnaround of report requests, online editing of input data, and online query capabilities. There are no stringent mandatory response time requirements associated with rangeland monitoring functions.

- **Interfaces:**

  - Legal description and land characterization data should be available to range conservationists.

  - Interface with the Forest Service information would be handy.

  - Job Document Reporting (JDR) information is required and should be automatically updated by this function.

  - Financial Management Sytem (FMS) should be automatically updated by this function.

- **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- Forms:

  - Corporative Agreement for Range Improvements - Form 4120-6

  - Range Improvement Permit - Form 4120-7

  - Assignment of Range Improvements - Form 4120-8

  - Proffer of Monetary Contribution - Form 4120-9

  - Study Location and Documentation Data (a 1-page document with about 50 data elements on it)

- -- Trend Study Method Matrix (a 1-page matrix with about 11 methods and 8 trend indicators)

- -- Trend Study Data Photo Plot Method (form with about 600 cells in it)

- -- Community Structure Analysis Method - Foliar Cover Data (a matrix with about 600 cells in it)

- -- Community Structure Analysis Method - Density and Frequency Data (a matrix with about 600 cells in it)

- -- The Community Structure Analysis Method - Summary (a matrix with about 300 cells in it)

- -- Daubenmire Method - 6 Cover Classes (a matrix with about 600 cells in it -- there's also one for 10 Cover Classes)

- -- The Trend Study Pace Frequency Method (a 1-page matrix with about 150 cells in it)

- -- The Quadrat Frequency Method (a 1-page matrix with about 150 cells in it)

- -- The Nested Frequency Method - 4 Transects (a 1-page matrix with about 150 cells in it)

- -- The Nested Frequency Method - 4 Transects Summary (a 1-page matrix with about 300 cells in it)

- -- The Nested Frequency Method - 10 Transects (a 1-page matrix with about 600 cells in it)

- -- The Line Intercept Method (a form which has room for about 300 cells of information)

- -- A Form for Pace Frequency, which can be fille[illegible] it looks like about 1,500 pieces of information could be [illegible] the form

- -- A Quadrat Frequency Form, which has abou[illegible] cells of information

o Rangeland Improvement/Construction Job Reporting Information - Form 1732-1

Major programmatic outputs:

o Files on ranges showing results of improvements and monitoring statistics

o Studies on rangeland conditions

o Management reports on results of the monitoring program

Use of existing system: (SAGERAM, JDR, IHCS, FMS)

- **Number of users:** BLM now employs about 50 people in its rangeland monitoring program. Of these about 40 people would be using the system at the Resource Area level. The systems may be monitored by District and State Office personnel.

- **Amount of use:** Use will be heavy from March through September and then very light in the winter time when no range monitoring is being done.

- **Distribution by office:** The rangeland monitoring systems will be used by the Resource Area Offices.

- **Sizing:** A total of 4,900 visits were made on 4,280 allotments in 1985.

Growth factors:

- BLM expects no major changes in rangeland monitoring for the next 5-10 years. The Corporative Management Agreements, however, are being scrutinized and if these are abolished, there will be a heavier load put on BLM to monitor the land.

Part 4: Existing System

Name:	SAGERAM
Location:	Denver Service Center (DSC), Denver, Colorado
Hardware:	Honeywell DPS-8, Tanberg terminals
Software:	Aspen/2
Telecommunications:	BLM Network
Contact:	Rangeland Resources WO-220

Name: Job Document Reporting (JDR)

Location: Denver Service Center, Denver, Colorado

Hardware: Honeywell DPS-8, Tanberg terminals

Software: Aspen/2

Telecommunications: BLM Network

Contact: Wildlife WO-240 and Rangeland Resources WO-220

Name: Integrated Habitat Information and Classification (IHICS)

Location: Denver Service Center, Denver, Colorado

Hardware: Honeywell DPS-8, Tanberg terminals

Software: Aspen/2

Telecommunications: BLM Network

Contact: Wildlife WO-240

<<< BLM Functional Requirements >>>

Public Land Management and Improvement

Part 1: General Information

Associated Program:	Range Management, Wildlife Habitat Management, Forestry, Recreational, Cultural and Wilderness Resources.
User Organizations:	Division of Lands and Renewable Resources (DO) and Resource Areas.
Owner/Operator/Maintainer:	Division of Lands and Renewable Resources (DO) and Resource Areas.
Existing Automated Systems:	Job Document Reporting (JDR), SageRam, Water Data Management System (WDMS), Remote Area Weather Stations System (RAWS).

Part 2: Description of Overall Program, Requirement, and Current Procedures

BLM has a mandate to manage the lands in a manner that will protect and improve the quality of the soil, water and air resources and watershed values associated with public lands. It also has the responsibility to rehabilitate damaged lands in wilderness areas, to restore, maintain and improve fish and wildlife habitat conditions, to reforest cut areas, and to improve range lands. Improvement also includes recreational area improvement such as: preserving rivers, caves and cultural sites, preserving archaeological sights. The Resource Areas are responsible for public land improvements.

Improvements to public land are first specified in the Resource Management Plans and then budgeted with funds shown in the Annual Work Plan. Once funds have been set aside for various improvements the Resource Area specialists study the situation (if the study has not already been made), develop a plan for the improvement, and finally carry it out. Improvements such as constructing fences, building retainer walls, designing buildings for recreational areas, and installing necessary roads, are made with the help of the engineering staff under the Administrative Divisions. Other improvements such as weed control spraying, reseeding, reforestation, and wildlife habitat development are made by the specialists within the Resource Area.

The improvements cover a variety of subjects as the following examples will show:

- Reforestation and tree species improvement - involves setting up and maintaining seedling plantations to record and track disease resistant species. This is a long-range improvement which takes 10 to 20 years to improve a species which is eventually planted to reforest BLM land.

- Range improvements are made based on land use plans which identify guidance for the objectives of resource managment and improvement actions. Rangeland improvements must be authorized either by a corportive agreement for range improvements or by a range improvement permit. Removal of range improvements must also be authorized. these improvements may be required by BLM in order to meet the terms and conditions of a lease or permit agreement. Maintenance responsibilities for range improvements are assigned to the primary beneficiary. Fifty percent of all grazing fees are credited to a separate account in the Treasury for a range betterment fund and these funds are used for rehabilitation, protection, and improvement of the public lands. These funds are distributed to the districts in proportion to the grazing fees collected in that District.

- Water quality and availability - BLM is mandated to: work with State governments to improve the quality of water; provide water on range land and stabilize soil and water conditions, and provide safe drinking water at any BLM campground recreation site. BLM is also mandated to cooperate with the Federal, State and local agencies to undertake research in any water-related problems and to maintain studies of water supplies and water programs.

- Water shed protection - BLM is mandated to protect and regulate the development of any public lands in a manner to control runoff, to minimize soil erosion, siltation and other destructive consequences of uncontrolled water flows to maintain and improve storage, yield, quality and quantity of subsurface and surface waters.

- Restore, maintain and improve fish and wildlife habitats - BLM is to manage public lands in a manner that will provide food and habitat for fish and wildlife. Fish and wildlife development and utilization is one of the principal or major uses of the public lands.

- Improve soil conditions - Includes monitoring grazing use, reduce selenium leaching due to irrigate (e.g., Selenium concentrations poison fish), weed control and soil erosion due to air, water or other sources.

- Vegetation improvements - To include using pesticides to protect vegetation

To support this function, BLM needs an information system that will:

- o Store information on improvement projects such as: land location, nature of the work, deadlines and milestones, and cost benefits expected/cost benefits recovered for larger projects.
- o Generate water flow, air quality, water quality and flood routing models.
- o Generate Management reports on improvements and query output
- o Provide Cost accounting capability.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o **Operating schedule/deadlines:** The land improvement function peaks in the summertime due to the weather conditions but plans for improvements would be a fairly steady year round activity. The need for improvements would vary from State to State.
- o **Security/privacy:** Information on land improvements is not confidential but it should be protected from unauthorized update and access.
- o **Response time:** Most improvement activities can be predicted in advance. A system should provide for easy convenient use such as same day turn around for report requests, on-line updates and query capabilities. There are not stringent, mandatory response time requirements associated with the land improvements functions.
- o **Interfaces:**
  - -- Use of the STORMS system for information on spacing and herbicides for nursery development
  - -- Pesticide information on an ASPEN/2 system which will available in 1986 used to track pesticide proposal information such as acreage, sensitive site, chemicals, and approval
  - -- STORET (EPA)
  - -- SRIS (SCS)
  - -- The Integrated Habitat Inventory Classification System (IHICS) on habitat information
  - -- The Riparian Aquatic Inventory Data Storage (RAIDS) on wetlands and fish habitats
  - -- The Threatened and Endangered Species database (T&E) on ASPEN/2

-- Recreational database developed on the Wang using dBase II and is currently residing on minis distributed between the States

-- The Weed Control database on ASPEN/2 which includes an inventory by allotment and the chemicals used

-- Resource Management Plan information

-- Annual Work Plan budgetary information

-- SageRam

o **Reliability:** Normal business standards for reliability are satisfactory

Major programmatic inputs:

o Forms - #1732-1 and JDR edit sheet - key entry personnel spend 6-7 hours per week keying input data

o Other information from outside systems

Major programmatic outputs:

o Improvements reported on the JDR

o Models of water flow, flood routing and air/water quality

Use of existing system: (Job Document Reporting system)

o **Number of users:** Percent of time spend per year on improvements, by program is: Range 20%, Forestry 10%, Wildlife Habitat Management 20%, and Recreation and Culture 30%. The JDR information is entered by Resource Area personnel at the approximately 153 Resource Areas.

o **Amount of use:** The use of JDR is moderate. Since JDR does not have the capability to track jobs during the AWP process only 15% of the Districts use it. The majority of the Districts record job information upon completion of the job.

o **Distribution by office:** The distribution of JDR is at the District and Resource Area level.

o **Refer to Figure B-4 for sizing information** (100,000 characters are entered and 300-400 pages generated per week for ranges, according to the Functional Requirement Document written for Rangeland, 9-85).

Growth factors:

- o BLM expects no major changes in improvement projects. The current staff level will be maintained and will continue to produce approximately the same amount of work as is currently being done which is a full workload.

Part 4: Existing System

Name: Job Documentation Reporting (JDR)

Location: Denver Service Center, Denver, Colorado

Hardware: Honeywell DPS-8

Software: ASPEN/2, COBOL

Telecommunications: BLM Network

Contact: Dave Kathman, (YA-470)

Name: SageRam

Location: DSC

Hardware: Honeywell DPS-8/70

Software: Fortran

Telecommunications: BLM Network

Contact: Rangeland Resources WO-220

Figure B-4 - Improvements include fencing, planting, burning, riparian, wetlands and lake improvements, nest and roosts and others.

Percent of Acerage in Range Condition Classes by State
Fiscal Year 1984

	Percent by range condition			
Geographic State	Excellent	Good	Fair	Good
Arizona	3	24	52	21
California	1	46	42	11
Colorado	2	16	45	30
Idaho	6	31	46	17
Montana	5	67	26	2
Nevada	8	25	42	23
New Mexico	2	26	48	24
Oregon	4	25	52	19
Utah	4	33	39	16
Wyoming	6	46	39	8
Bureauwide	5	31	42	18

Source: Public Land Statistics - 1984

Number of Rangeland Improvements Projects by State

State	Number of Jobs
Alaska	2
Arizona	7,254
California	4,024
Colorado	4,024
Idaho	8,808
Montana	15,544
New Mexico	10,410
Nevada	8,985
Oregon	10,537
Utah	7,460
Wyoming	11,522
TOTAL	93,190

Source: Functional Needs Statement - September 1985 Range ADP Work Group

Figure B-4

STATE	Barrier Removal (number)	Den & Nest Facilities (number)	Fence Modifications (number)	Instream Structures (number)	New Water Facilities (number)	Perch & Roost Structures (number)	Prescribed Burns (number)	Ramps/ Passes (number)	Water Facilities Improved (number)
Alaska	-	18	-	2	-	-	-	-	-
Arizona	-	-	20	-	30	-	8	-	20
California	123	25	2	55	36	8	13	-	1
Colorado	-	15	1	695	23	-	5	-	1
Idaho	5	39	4	22	13	6	6	-	50
Montana	-	161	21	9	9	18	4	2	22
Nevada	-	25	12	38	20	-	-	-	15
New Mexico	-	-	-	-	14	12	-	-	-
Oregon	1	37	1	23	10	-	3	-	15
Utah	-	12	3	10	39	30	11	1	9
Wyoming	-	2	1	6	17	-	7	-	-
Eastern States	-	-	-	-	-	-	-	-	-
Total	129	334	65	860	211	74	57	3	133

STATE	Protective Fencing (miles)	Spawning bed development (miles)	Streambank Stabilization (miles)	Habitat Disking, Chaining (acres)	Lake Improvement (acres)	Seeding (acres)	Prescribed Burning (acres)	Wetland Improvements (acres)
Alaska	-	1	1	1	-	2	-	-
Arizona	25	-	-	-	-	5,000	5,000	500
California	18	2	5	200	-	487	4,173	500
Colorado	4	-	-	386	25	1,960	6,420	30
Idaho	31	-	2	20	-	135	3,030	2,002
Montana	32	-	4	-	-	166	252	31
Nevada	12	-	12	-	-	-	-	600
New Mexico	2	-	-	-	1	-	-	1
Oregon	20	-	1	-	12	1,144	715	570
Utah	8	-	-	2,400	-	50	2,100	50
Wyoming	29	-	6	-	22	51	700	138
Eastern States	-	-	-	-	-	-	-	-
Total	181	3	31	3,007	60	8,995	22,390	4,422

Source: Wildlife Management - WO

<<< BLM Functional Requirement >>>

Inventory

Part 1: General Information

Associated Program: Land Management

User Organizations: Division of Resource Management (DO)
Resource Areas

Owner/Operator/Maintainer: Same as above.

Existing Automated System:

- o Various Aspen Data Bases
- o The Integrated Habitat Information and Classification System (IHICS)
- o Ecological Site Inventory (ESI)
- o Forest Inventory (FINSYS) - no mention of this in field office areas but was on list of systems at DSC - Used SIMEX at Klamath Falls, Or.
- o Riparian Aquatic Inventory Data Storage (RAIDS)
- o Threatened and Endangered Species (T&E)
- o The Wildlife Bulletin Board - Fish and Wildlife Service
- o Adopt a Horse Data System
- o Archaeology and Palentology Tracking System
- o Soil and Vegatation Inventory (SVIM) - recently scrapped because politically sensitive for ranchers
- o Geographic Information System (GIS)
- o Data Base A126/RENO - at Denver Service Center with Vegatation Inventory
- o BIOMES (Ecological Information) from Rmaus on grassland, forestland, and Savanahs - seldom used

- o STORET - a shared data base managed by EPA
- o STORMS - an operations inventory system for the forest program
- o TPCC-01 - a forestry inventory system on Bonneville Power IBM which is part of the forest inventory system
- o Shared inventory of land use permits with Forest Service in Medford, Oregon
- o PSW-View-IT - Forest Service system at Fort Collins used during inventory of forest land in Oregon
- o Natural Herritage Plan Data Base - Shared with Nature Conservancy Group in Denver, Colorado
- o Western Oregon Timber Sales System

Part 2: Description of Overall Program, Requirement, and Current Procedures

Inventory of resources is a backbone of all information processed by BLM. It is the basis for the Resource Management Plans, is required for Environmental Impact Statements, and is used in processing Cases on land use. This material is frequently collected during the development of an RMP but it can also be collected as part of a daily working function. For example, when an archaeologist goes out and finds a new archaeological or cultural site it becomes part of an inventory of such sites, or when a new threatened and endangered species is found it becomes part of an inventory of such species.

BLM uses the term inventory also to apply to the collection of information about a Withdrawal or a Rights-of-Way case. In the strictest sense, these should not be included as inventories because they belong as Case records under case processing; they have not been included as inventories in this function. Inventory for this function is defined as information about existing resources such as rangeland, forests, threatened and endangered species, wild horses and burros, on a specific piece of land. It is synonymous with themes collected for GIS.

The inventory function can be done on an ad hoc basis, or as part of another study. In either case, the function is one of collecting information and recording it so that it can be easily accessed in the future. This process of recording is currently done using a great number of data bases or systems.

The inventory or thematic information collected during this function are those data which should be available for processing under the Geographic Information System (GIS).

To support this function, BLM needs an information system that will:

- Store inventory information giving location, description, condition, and other pertinent information useful to BLM users.
- Provide scanning and keyword search to locate items by categories such as type, location, program area.
- Provide one-time storage of information so that duplicate information is eliminated, but all information is easily accessed by all users.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The inventory activity occurs throughout the year. Information collected in the summer would provide peak loading for that type of information but data would be accessed fairly regularly throughout the year. There would be a heavy need for this information during the development of a Resource Management Plan, and this varies by State.
- **Security/privacy:** Some inventory information such as that on archaeological sites is confidential but confidentiality would have to be established for each type of inventory information individually. All inventory information should be protected from unauthorized update or access.
- **Response time:** Inventory information requires easy and convenient use such as same day turnaround of report requests, online editing of input and online queries. There are no stringent mandatory response time requirements associated with inventory information.
- **Interfaces:**
  - -- Legal land description and land characteristics data should be available
  - -- Case information might be used during inventory process
  - -- There is a need for interface with a variety of systems outside of BLM or the Department of Interior has noted under Part 1 for existing systems.
- **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- Inputs to the inventory function are data collected and stored at the BLM Resource Areas for use in developing RMPs and fulfilling the mandates of multiple land use which BLM is required by law to meet.

Major programmatic outputs:

- Lists of information showing quantities, location, condition and value of resources.

Use of existing system (GIS):

- **Number of users:** BLM now employs about -- people in inventory functions. The inventory function is performed at the Resource Area levels but is accessed by the Division of Lands in Renewable Resources at the State Office level and the Division of Resource Management at the District Office levels.
- **Amount of use:** The use of inventory data is heavy as it forms the backbone for most of the work done in the lands programs at BLM.
- **Distribution by office:** Each Resource Area would retain its own inventory information, however this information should be available in summary form at least to the District, State and Washington office levels.

Growth factors:

- Major inventory efforts have already been accomplished by BLM. However, inventories will continue to be collected. For instance, the inventory of Wilderness areas is just now being established and inventories of threatened and endangered species, and archaeological sites will continue to grow as these programs continue to develop new inventory material.

Part 4: Existing System

Name: Geographical Information System (GIS)

Location: GIS has been developed in Wyoming, New Mexico, Arizona, Colorado, Oregon, and California. Development efforts are underway in Utah, Montana, Idaho, Nevada, and the Eastern States Office.

Hardware: Wyoming; Data General M-600 with two 196 Megabytes and one 366 Megabyte disk drives and 800-1600 BPI tape drive, a Zeta plotter and a Versatec plotter.

New Mexico - Data General M-600 with two 400 Megabyte and one 366 Megabyte disk drives. An 800-1600 BPI tape drive and a Zeta Plotter.

Arizona - Uses the DSC computer but configuration is unknown.

Colorado - Data General MV-8000 with two 196 Megabyte and one 366 Megabyte disk drives and two dual density 8000-1600 BPI tape drives.

Oregon - Data General C-330 with two 196 megabyte disk drives and an 800 BPI tape drive.

California - Data General C-330 central processor and two 196 Megabyte disk drives and an 800-1600 BPI tape drive.

Software: MOSS. Colorado has INFOSEN for a data base.

Telecommunications: Unknown

Contact: Steve Moore, Grand Junction Colorado, District Office

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Existing System II:

Name: Inventory Data System (IDS)

Location: Denver Service Center, Denver Colorado

Hardware: Honeywell, DPS-8

Software: COBOL and Fortran, ASPEN/2, TEX and AZ7

Telecommunications: BLM Network

Contact: Branch of Management Operations (D-252)

See Functional Requirements Document September 1985 Range ADP Workgroup

<<< BLM Functional Requirement >>>

Timber Sale Appraisal

Part 1: General Information

Associated Program:	Forest Program
User Organizations:	Division of Lands and Renewable Resources (SO) Division of Resource Management (DO) Resource Areas
Owner/Operator/Maintainer:	Division of Resource Management (EO)
Existing Automated System:	Public Domain Forest Inventory, Prognosis, and SIMEX

Part 2: Description of Overall Program, Requirement, and Current Procedures

BLM administers 90 million acres of forest land; of this 2.4 million acres in Oregon are being harvested and are commercially valuable. Most timber appraisal is done in Oregon. Refer to the timber sales function and the improvements (reforestation) function for additional timber information.

Forestry is highly visible and is an issue driven program. The current issue is the below cost timber sales. Timber prices are set through appraisals by BLM and several years ago timber costs were high but the demand fell. Timber companies are stuck paying the high buying price but faced with low resale prices. In 1984 the President signed the Federal Timber Contract Modification Act to allow purchasers holding timber contacts bid at high prices to turn back 55% of the volume to the government. BLM and Forest Service are publishing the final implementation rules now. There is a system called the "Timber Relief System" on sales, price, and the company who defaulted on their purchasing which "may reside on the DPS-8."

Timber cruising is the process by which trees are estimated for their yield in board feet. The unit of measure is the Scribner 16 board foot measure which is used to both appraise and sell timber. The cubic foot measure is used to compute the allowable harvest and deplete inventory records. Tons of weight is also an accepatable unit of measure.

The cruising process can be 100 percent cruise for high value timber or for small quantities of timber. For 100 percent cruise each tree is looked at and estimated for its board foot content. A sample cruise can be used to measure high value timber with many trees and a sampling taken to predict the total board foot. The 3P sample method (Probability, Proportion and Prediction), used for high value timber, takes a preliminary sample to generate a random number table. The table is used to select trees which are cut and measured for size (DBH - diameter at breast height), and the total board foot measured is then used to estimate the entire cut. There are also variable radius plot sample cruises, fixed area plot sample cruises and strip sample cruises. The last three are used generally as precruise processess to determine a preliminary estimate or they are used for sales for low-value timber.

Measurement information is written on a pad of paper or sometimes recorded on hand held radios. The forester then returns to the office and figures up what the lot should go for in a bidding lease. The allowable cut information in Oregon is then stored on the forestry system through a PC. This is called a Forestry Inventory System and it is a decadal plan for cuts in the 1990s.

The Bureau has traditionally used cruise sales (also termed lump sum sales) as a basis for selling timber. The method of sale makes the accuracy of the cruise especially important. Cruising knowledge is acquired through training and experience. The purpose of cruising is to provide accurate estimates of timber volumes and sometimes values for conducting the Bureau's forest management programs. The procedures of cruise involve:

- o Establising a topographical map of the project area to plan the location of cruise strips within the area
- o Physically cruising each tree and marking the tree or placing a cruise strip on it to show that has been cruised
- o Noting the board feet on a field tally sheet
- o Creating a subsale summary sheet which includes the species and the number of trees and the board foot units involved
- o Creating volume computations which give the volume per tree, the total height, the number of trees and a net volume
- o Producing the timber cruise report which is a summation of the entire cruise

Data analysis on forestry appraisal is done using SPSS and SAS on Bonnieville Power IBM. The appraiser also writes Fortran programs for data analysis and for data loading to fill in where tools on Bonnieville Power don't work for him.

To support this function; BLM needs an information system that will:

- o Provide easy input of forest appraisal information preferably from the timber site
- o Store appraisal information on timber
- o Provide calculations to show costs based on cruising figures

- Provide data analysis tools

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Timber appraisal is done over a long period of time and has no stringent deadlines. It operates on a year round schedule.
- **Security/privacy:** The only requirements for security are for bankruptcy information stored on the timber relief system. All other information is public domain information.
- **Response time:** A system should produce easy convenient use such as same day turnaround of report requests, online editing of input, and online querying.
- **Interfaces:**
  - Primary interface needs are within BLM
  - Interacts with following agencies:

    Oregon State Forestry
    Washington Department of Natural Resources
    Forest Service
    Fish and Wildlife Service
    Environmental Quality
    Sole Conservation Service
    Oregon National Heritage

  - The Forestry Service and BLM do not cost their timber in the same way and therefore these two programs could not share an appraisal system
- **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- Forest appraisal information from cruising

Major programmatic outputs:

- Forest appraisal information
- Information for the Annual Work Plan

Use of existing system: (Timber Inventory System)

- o Number of users: BLM estimates about 203 work months or 10.3% of its total forestry management work months are spent in the cruising and appraisal functions.
- o Amount of use: Use will be moderate.
- o Distribution by office: Appraisal will occur primarily at the District and Resource Area office depending upon state and locations.

Growth factors:

- o No expected growth but expect increase sophistication in information handling. Expect to collect forest information through satellite process called triangulation. Also would like to use GIS to track land use conflicts.

Part 4: Existing System

Name:	Western Oregon Timber Information System
Location:	Portland, Oregon
Hardware:	Bonneville Power - IBM
Software:	BASIC and ASPEN/2
Telecommunications:	BLM Network
Contact:	Bob Metzger - Chief Forestry Branch - Portland, Oregon (930)

Name:	Public Domain Forest Inventory
Location:	DSC
Hardware:	Honeywell DPS-8/70, any type of terminal
Software:	COBOL, Fortran, ASPEN/2

Telecommunications:	BLM Network
Contract:	Bill Williams, (YA-470)

<<< BLM Functional Requirements >>>

Timber Sales

Part 1: General Information

Associated Program:	Forestry
User Organizations:	Division of Lands and Renewable Resources (SO) Division of Resource Management (DO) Resource Areas
Owner/Operator/Maintainer:	Division of Resource Management (DO)
Existing Automated System:	Western Oregon Timber Information System (Replacing old Green Sheet System by April of 1986) Material Sales Forest Road System

Part 2: Description of Overall Program, Requirement, and Current Procedures

BLM administers about 90 million acres of forest land; 64 million of these are in Alaska where timber development has been deferred until native claims, withdrawals and dispositions are complete. The most commercially valuable timberlands are the 2.4 million acres in Oregon known as Oregon and California Railroad Grant Land and Coos Bay Wagon Road Grant Lands. These lands produce 91 percent of the total board feet harvested annually from BLM forest. BLM also sells other forest products such as Christmas trees and firewood.

The Forest Management Program consists of:

- Developing the Allowable Cut Plan (ACP)
- Inventoring types of timber production classifications
- Measuring the amount of timber available
- Developing an annual timber sale plan
- Advertising and preparing for the sale
- Conducting the sale

- Reporting on timber inventory and timber sales

- Reforestation

Allowable Cut Planning - includes an inventory, an analysis of the potential feasibility of the cut, alternative approaches to action, and generating a forest simulation model to provide a statistical measurement of the impact of the alternative actions. An estimated 125 work months are spent in developing this an other forest plans.

There are 3 types of inventories which take place:

- An extensive inventory showing the physical characteristics of the forest and the biological condition of the timber resources,

- An intensive timber inventory which provides detail information such as maps with acreage and volumes

- Non-timber inventories which include wildlife, water shed, and soil surveys, and other information on recreation scenic areas streamside roads and corridors and wildlife habitats to show potential forest value and use.

This data is analyzed for environmental, technical, and economic feasibility to determine what should be done with the forest lands. Next alternatives are developed, a computerized forest simulation model is run to determine the optimum solution for the alternatives under consideration. This process of Allowable Cut planning is a extenuation of the Management Framework Plan developed for all programs within the area. District managers direct the Allowable Cut Planning effort.

Timber Production Classification - The District manager is responsible for all classification decisions which result from inventories. The Resource Area manager, however, makes the final classification decision. Timber classification is based upon physical and biological characteristics and not economic and multiple use consideration. It is not intended to make decisions on other completed resource uses but to determine which lands are suited or not suited for sustained yield timber production. Classifications include:

- Non-forest lands - not capable of maintaining 10 percent of forest trees

- Forest lands

- Commercial forest lands - capable of yielding cubic feet of wood per acre per year

- Woodland - land producing trees not typically utilized as saw timber products

- Fragile areas - sites whose timber growing potential is easily reduced

- Category 1 - sites that can be reforested in 5 years
- Category 2 - sites that can be reforested between 6 and 15 years
- Suitable commerical forest lands capable of sustaining long-term timber production
- Non-suitable commerical forest land - incapable of sustained long-term timber production

Timber classification consists of accumulating data and information such as soil maps, aerial photos, topography maps, and existing classification information and displaying on these maps various classification symbols to indicate the type of timber found there. The basic unit of classification is an area of land and not a timber stand. The minimum unit size is generally around 10 acres. The resulting map or overlay is checked against the Master Title Plat for acreage accuracy. Technical respresentations are made in a narrative form and should include discussions which support the recommendation.

Timber Measurement - is accomplished through cruising or scaling. The District manager directs all timber measurement. However, the State director issues an approved list of forest products under Manual Supplement 5300. Refer to the Forest Appraisal function for timber measurement information.

Sale of Forest Product - Forest products are sold by the District or Area manager in conformance with established policies and procedures. The full allowable cut is offered for sale annually. Advertised sales are made based on competitive bids and cannot be less than the BLM appraised value. Other Than advertised sales can be made based on a fair market value using Bureau-approved contract forms. Other than advertised sales are prescribed in Bureau's Manual 43-CFR-5042.0-6.

The District manager is responsible for developing the Annual Sale Plan, scheduling sales by fiscal year quarter periods and seeking a reasonable balance of offering throughout the year. This plan includes the probable time when the various tracts of timber included in the plan will be offered for sale, small business set aside sales, and the probable location and anticipated volume for such tracts. The District or Resource Area manager is then reasonable for preparing the contracts for sale of the forest products. Contract production is about 3.3% of the total forest sale effort. The foresters can include additional provisions in the contract to cover conditions particular to the sale area such as designations of reserved timber, road construction, logging methods, silvicultural practices, reforestation, snag felling, slash disposal, fire control, and improvements and protection of water sheds, recreational values, and the prevention of pollution.

Records and Annual Reporting - All Districts doing forest development work or having commercial forest land must complete Form 5700-1 the Reforestation Status And Annual Summary, and Form 5700-2 Reforestation Site Preparation And Protective Measures Accomplished. These reports are submitted annually to the State director on July 15. The State director consolidates the reports and sends them to the Washington office by September 1st.

External reports are submitted by each District to the State director by July 14 on forest land and wind barriers planted. Consolidated reports are then sent to the Washington office by September 1st and provide information to the Forest Service and the U.S. Department of Agriculture about BLM reforestation.

The Monthly Timber Sale Results is bought by timber companies and submitted to the Washington Office.

To support this function, BLM needs an information system that will:

- o Maintain an inventory of timber information such as, classification, location, measurement, milestone dates for sale process, financial data, and other information necessary to sell timber
- o Provide management reports and ad hoc query output
- o Provide automated engineering design tools to prepare the plan for timber cutting (not mandatory but desirable) as 11% of the work months are spent in Forest engineering
- o Provide modeling on forest yields for timber harvests
- o Provide capabilities to analyze cost benefits of the timber program
- o Provide regression analysis

Part 3: Sizing and Performance Requirements

Performance requirements:

- o Operating schedule/deadlines: Forest management and activities occur fairly evenly throughout the year. There will be peak demands quarterly for timber sales and a slightly higher input of information during the cruising season which is generally during the summer months.
- o Security/privacy: None except for bankrupt cases by timber purchasers.
- o Response time: The system should provide easy convenient use such as same day turnaround on report requests, on-line editing of input data, and on-line query.
- o Interfaces:
  - -- Cadastral Survey information to prepare design for forest cutting
  - -- Legal land description and land characterization data should be available.

-- Interaction with outside agencies to include Oregon State Forestry, Washington Department of Natural Resources, Forest Service, Fish and Wildlife, Environmental Quality, Soil Conservation, Oregon National Heritage Society.

- **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- Allowable Cut Planning information - developed yearly by six states, with forest lands (Oregon, California, Wyoming, Colorado, Montana and Idaho)
- Timber classification information - developed annually by each State
- Timber measurement information dependant upon the allowable cut plan information varies by State
- Annual Timber Plan sales information developed primarily in the six timber producing states
- Reforestation information such as seeding, site preparation, tracking seeding projects. (see functional requirements on land improvements)

Major programmatic outputs:

- Monthly Timber Sales Report
- Annual Report to State director
- Allowable Cut Plan
- Sale leases

Use of existing system: (Western Oregon, Timber Information System (replacing old Green Sheet System))

- **Number of users:** BLM now estimates approximately 1,003 work months are spent in Forest product sales functions. This is 50% of the total Forestry work months expended; the other 50% are spent on reforestation. Forestry information is entered at the District level but predominately in Oregon State districts.
- **Amount of use:** The amount of use for the system would be moderate with data entry peaking during inventory periods.
- **Distribution by office:** Use predominately by District or Resource Area office.
- **Refer to Figure B-5 for sizing information**

Figure B-5. Most forestry sales take place in Oregon

Timber disposition on public lands by State
Fiscal Year 1984

Administrative States	Total Volume MBF	Value of Timber Products
California	11,491	$ 822,068.64
Colorado	8,114	139,465.92
Idaho	8,375	273,790.25
Montana	7,038	161,994.99
New Mexico	2,407	36,899.60
Oregon:		
Eastern	17,804	626,415.45
Western	1,054,386	114,123,019.44
Utah	5,803	40,665.25
Wyoming	12,465	130,949.93
TOTAL	1,129,979	116,391,421.75

Note: This table is a summary of timber disposition taken by the Bureau of Land Management during the fiscal year by competitive or negotiated sales, right-of-way sales, additional sales, or trespass sales presented by type of product. Timber products listed as solid were not necessarily removed from Bureau of Land Management lands or paid for during the fiscal year. Data do not include sales of nontimber forest products ... (see) or Free-use timber products disposition (see). Compare with Timber sales, regulated and non-regulated by State.

Source: Public Land Statistics - 1984

Total Work Months Expended
on Timber Management

Western Oregon	6,322
Others	1,286

Source: WO-230

Growth factors:

- o No expected growth factors, however, an increase in information handling is anticipated with the use of GIS and satellite information called triangulation.

Part 4: Existing Systems

Name: Wester Oregon Timber Information System

Location: Bonneville Power, Portland Oregon

Hardware: IBM

Software: BASIC and ASPEN/2

Telecommunications: BLM Network

Contact: Bonnie Zimmerman, or Pat Green, both in Portland, 503-231-2220

Name: Reforestation Management System (STORMS)

Location: Oregon

Hardware: Wang PC

Software: Revelation

Telecommunications: Standalone

Contact: Dave Palmer - Roseburg DO (Oregon)

Name: Forest Roads System

Location: Denver Service Center, Denver, CO

Hardware: Wang PC or DPS-8/70

Software: ASPEN/2

Telecommunications: BLM Network

Contact: Tom Costello (D-470)

Name: Material Sales (Vegetable and Mineral)

Location: Denver Service Center, Denver, CO

Hardware: DPS-8

Software: COBOL, ASPEN/2

Telecommunications: BLM Network

Contact: Bill Bradley (WO-230)
Tom Costello (D-470)

<<< BLM Functional Requirements >>>

Wild Horses and Burros

Part 1: General Information

Associated Program:	Wild Horses and Burros
User Organizations:	Wild Horses and Burros Division - WO, Division of Land and Renewable Resources - SO, Division of Resource Management - DO
Owner/Operator/Maintainer:	Division of Resource Management - DO
Existing Automated System:	Adopt-a-Horse system - ADOPT

Part 2: Description of Overall Program, Requirement, and Current Procedures

The mission of Wild Horses and Burros Division is to move the excess wild horses and burros off of the land and get them adopted by individuals, monitor the care for a year, and then turn over the title to the adopter. Once the population is under control the remaining group of horses will be maintained on the public lands.

Approximately 52,000 wild horses and 12,000 wild burros roam BLM-managed ranglands in 10 western states. Protected under the Wild Free-Roaming Horse and Burro Act of 1971, as amended, the animals compete for limited forage with domestic livestock and native wildlife. In order to prevent damage to the range through overgrazing, and potential starvation among the animals due to overpopulation, BLM determines appropriate management levels for wild horse and burro herds, and then gathers the excess animals. Healthy animals are offered to qualified members of the public through BLM's Adopt-a-Horse or Burro Program.

The program has been in operation Bureau-wide since 1976; homes for over 50,000 animals have been found since then.

In addition to three permanent, year-round adoption centers in Texas, Pennsylvania and Tennessee, BLM operates 42 temporary adoption centers called "satellites." Satellites are held in locations that cannot be served conveniently by the permanent centers. Local facilities are rented, arrangements are made to ship two or three truckloads of animals, and a publicity campaign is mounted to build public awareness and attract applicants. The event itself usually runs four or five days, during which homes for as many as 200 animals may be found. BLM estimates that 45% of the total program manhours are spent in the adoption process.

The adoption of a wild horse differs from a sale in two ways. First, all applicants are screened to ensure that their facilities and means are adequate to maintain a wild horse. Second, adoption does not mean automatic transfer of title. For the first twelve months following an adoption, the adopted animal remains U.S. Government property and subject to regulations concerning its use. As the end of twelve months, the adopter may apply to BLM for title; review of title applications and issuance of title certificates is performed by the wild horse and burro program staff. Occasionally, that same staff or special agents of BLMs Resource Protection Program will also be called upon to investigate reports of mistreatment or neglect of adopted but untitled animals.

The Resource Areas in states with predominant horse population are responsible for rounding up the horses and sending them to adoption centers. The removal process is an estimated 18% of the WH+B program. The principle horse and burro population is in California (10,000), Nevada (34,000), and Wyoming (7,000). Eastern States Office (ESO) is considered the primary marketing arm of the Adopt-a-Horse or Burro program, serving a geographic and population base exceeding that of any other BLM State office. A quarter of all the animals ever adopted through the program have been adopted through ESO, which maintains permanent adoption centers in Tennessee and Pennsylvania.

Adoption centers are run by BLM or maintained under contracts which are managed at the State or District level. It is BLM's responsibility to see that the centers are kept clean, that the adoptions take place in an orderly fashion and to process the adoptions to be sure that the horses and burros are getting adequate homes and then to monitor the adopted locations before issuing a license to turn the horse over to the adopter.

In locations where the horse population has not exceeded the desirable limit the Resource Areas are responsible for maintaining the horses on the land as an integral part of the natural system of the public lands. There is occasional litigation when suits are filed against the Department of Interior when the horses damage private land; the program for horses and burros has to process supportive information when such litigation occurs.

The program uses airplanes in some cases to count the horses and also to herd them into corrals as necessary.

To process horses and burros the program requires that the Resource Areas:

o Indentify excess wild horses and burros

o Roundup wild horses and burros and take them either to a satellite or a permanent adoption center

o Arrange for transportation, care enroute, and the papers for turning the horses over to the adoption site.

At the adoption center sites the BLM is responsible for:

o Monitoring the contractors who maintain the sites to be sure that the horses are properly fed and cared for.

- Advertising the presence of the horses, the conditions under which they can be adopted and processing all adoption papers.
- Screening the adopters to be sure that the care of the wild horses and burros will be adequate.
- Monitoring the adopted horses for one year prior to issuing ownership papers to the adopters.
- Providing papers to the adopters when they have successfully proven that they are capable of keeping the horses in the required manner.

BLM must also process and provide information for any legal action taken against BLM due to the presence of wild horses and burros on private land.

To support this function, BLM needs an information system that will:

- Store information on the adoption program such as number of animals, number of adoptions, locations of removal, location of adoption, adoptor information, costs to maintain and other information on the function which is required by the adoption program
- Generate management reports and ad hoc query information
- Maintain administrative information on adoption centers; cost effectiveness analysis capabilities would be useful

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Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The wild horses and burros program operates throughout the year with most adoptions taking place in the summer.
- **Security/privacy:** The wild horses and burros program does not have confidential information which needs protection, however, the system should be protected against unauthorized updates or access.
- **Response time:** Most wild horses and burros activities require a system which should provide for easy convenient use such as same day turnaround of report requests, on-line editing of input data, and on-line querying. There are no stringent mandatory response time requirements associated with the wild horses and burros program.
- Interfaces:
  - Information on legal cases which have been brought against BLM due to wild horses and burros
  - Rangeland conditions which would provide the program with an assessment of the condition of the land upon which the horses are roaming

- o **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- o Wild horse and burro population:
  - -- A record of adopted horses totalling 51,000 as of 1984. BLM currently processes 6,000 animals each a year. This will increase over the next three years and then decrease after that.
  - -- Information on the costs to maintain the wild horses in the adoption centers including feed, veterinary bills, and contractor expenses.
  - -- Information on monitoring the adoptor prior to granting formal adoption papers for each animal.
  - -- Information on adoptors and applicants.

Major programmatic outputs:

- o Statistics for annual Public Lands Statistics
- o Queries concerning local information on specific adoptors adoption centers, and statistics on numbers of horses, amount of money to maintain horses, etc.

Use of existing system:

- o **Number of users:** BLM estimates a total of almost 300,000 work hours are expended on the adoption program. Of these 20% are spent on administration, 4% monitoring adoptions, 45% on disposition (adoption) and 18% removing the animals from the land.
- o **Amount of use:** The use of the Adopt-a-Horse program is moderate and seasonal, with the heaviest use being in the summertime when the most adoptions take place.
- o **Distribution by office:** The Adopt-a-Horse system should be distributed primarily at the Resource Area level with use of summary material at the District, State office and Washington office levels.
- o **Refer to Figure B-6 for sizing information**

Growth factors:

- o There will be a three year growth in the wild horses and burros program and then it will diminish dramatically as the number of horses to be adopted levels off.

Figure B-6. Most wild horses are removed from ranges in the West and adopted by people in the South

Estimated wild free-roaming horse and burro population, fiscal year 1984

State	Horses	Burros	Total
Arizona	130	3,620	3,750
California	3,935	6,344	10,279
Colorado	696	-----	696
Idaho	630	-----	630
Montana	164	-----	164
Nevada	32,975	2,023	34,998
New Mexico	191	16	207
Oregon	3,745	29	3,774
Utah	1,810	58	1,868
Wyoming	7,604	-----	7,604
TOTAL	51,880	12,090	63,970

Note: Population estimates for fiscal year 1984 are based on censuses conducted in odd-numbered years, removals in fiscal year 1984, and an estimated annual population growth rate of 16 percent.

Source: Public Land Statistics - 1984

Part 4: Existing System

Name:	Adopt-a-Horse system (ADOPT)
Location:	The Denver Service Center, Denver, Colorado
Hardware:	Honeywell DPS-8, Tanberg terminals
Software:	ASPEN/2
Telecommunications:	BLM Network
Contact:	Vern Schultz - WO - 250

<<< BLM Functional Requirements >>>

Wildlife Habitat Management

Part 1: General Information

Associated Program: Wildlife

User Organizations: Division of Resource Management (DO)
Resource Areas

Owner/Operator/Maintainer: Division of Resource Management

Existing Automated System:

o Threatened and Endangered Species Data Base (T&E)

o Integrated Habitat Inventory Classification System (IHICS)

o Riparian Aquatic Inventory Data Storage (RAIDS)

o Spreadsheets

o Miscellaneous Field Office Data Bases

o Wildlife Bulletin Board (Fish and Wildlife Service)

o Wildlife Observation Report Data Base

Part 2: Description of Overall Program, Requirement, and Current Procedures

The program's primary responsibility is to manage habitat for fish and wildlife on the public lands. This includes ensuring that fish and wildlife habitat is considered in the management of all public land resources. Wildlife populations are managed by the respective State fish and wildlife agencies or, for migratory waterfowl and T/E species, by the Federal Government.

Priorities for the habitat management component of the program are:

o Provide food and cover for fish and wildlife by providing input into decisions on public lands that affect habitat resources.

- Habitat inventories and monitoring for critical planning efforts, EISs, HMPs, AMP evaluations, and other crucial Bureau initiatives.
- Habitat project maintenance.
- Habitat Management Plan implementation in crucial habitats.
- HMP development to address major issues identified through the planning process.

Priority emphasis is given to habitats in the following order:

- Wetland/Riparian
- Aquatic/Fisheries
- Terrestrial

Priorities for the Threatened and Endangered Species component of the program are:

- Conduct inventories and monitoring to provide input for planning and other decisions to avoid jeopardizing T/E and proposed species and to maintain or improve their habitats.
- Develop and implement recovery plans for T/E species and management plans to help improve the status of P/C species.
- Take actions necessary to help prevent the listing of candidate species.

Habitat priorities are as follows:

- Officially listed T/E species
- Species proposed for listing as T/E
- Candidate species

The procedures to manage public land wildlife habitats include:

- Develop stipulations for a wide variety of land use authorizations, permits, leases, etc. - conditions under which fish and wildlife habitats will be managed. Stipulations can include restrictions on habitat-disturbing activities during key time periods, i.e., big game winter range, elk calving areas, raptor nesting areas, etc. Other stipulations might include the establishment of buffer zones, modification of the method of disturbance to mitigate habitat impacts and complete avoidance of key habitat areas. These stipulations are developed and monitored by wildlife biologists working with other resource programs.

- Threatened and Endangered Species program - to protect the threatened species BLM biologists:
  - Receive proposed land use action
  - Check for pertinent information concerning threatened species
  - Conduct inventory of the area
  - Study habitat requirements of species
  - Determine whether the proposed action may effect the listed species and if so contact the Fish and Wildlife Service and take action prescribed by this determination
  - Provide information to the Fish and Wildlife Service in order to determine whether the proposed action may jeopardize the continued existence of the species.
  - Develop alternative approaches to mitigate or modify the proposed action to preclude impacts on the T&E species.
- Develop rules for coal mining related problems - requires writing handbooks, outlining how coal can be mined without harming wildlife habitat
- Develop procedures protecting and managing wildlife habitat in the case of gas and oil actions.
- Participate in planning effort - help develop RMPs and Habitat Management Plans (HMP). The Habitat Management Plan is a further definition of an action in a specific area mentioned in the RMP which includes goals such as building fences, building reservoirs, and creating nesting places for wildlife. Wildlife program specialists also provide input into activity plans for other resource programs, e.g., Allotment Management Plans or Herd Management Area Plans.
- Develop inventories - the process of developing inventories is loosely structured at this point; it could be a very detailed onsite inventory, or an inventory through literature search. The kind of inventory is determine by the type and timing of decisions requiring the information and is sometimes affected by funding.

To support this function, BLM needs an information system that will:

- Store information on wildlife habitats such as location, conditions required, kind of animal protected and other information necesssary for habitat development, monitoring and maintenance
- Provide information to track habitat trends, improvements, costs, and results of the habitat program
- Provide management reports and ad hoc query information.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o Operating schedule/deadlines: Wildlife habitat management is a year round effort. It is sometimes necessary to provide information for an immediate decision or for responding to the public.
- o Security/privacy: Some data contains sensitive detailed information on T&E species which would be detrimental to the program if not kept secure.
- o Response time: A system should provide easy access such as same day turnaround of report requests, online editing input data, and online queries.
- o Interfaces:
  - -- Fish and Wildlife Service systems
  - -- US Forest Service systems
  - -- Information of the GIS system if available
  - -- Bureau of Reclamation data
  - -- Financial Management System Information
  - -- Bonneville Power Administration data
- o Reliability: Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- o Habitat information
- o Threatened and endangered species information
- o Riparian aquatic information
- o Trends in habitat conditions information

Major programmatic outputs:

- o Statistics for the annual Public Land Statistics.
- o Information used in the Resource Management Plans.

- Habitat Management Plan.
- Field data, as adhoc queries or structured reports

Use of existing system: (IHICS, RAIDS, and TNE)

- **Number of users:** The Wildlife function employs approximately 280 people at both the Washington and field office level, most of them biologists. There are from one to two biologists in each Resource Area office, District office, and State office, and there are eight biologists in the Washington office. Other resource specialist also use the data. For instance hydrologists use the water-related special habitat features and wilderness specialist use the data in preparing EIS.
- **Amount of use:** The use of the systems would be from moderate to light; information is needed to respond to land actions and would depend on the number of actions in a particular District.
- **Distribution by office:** Primary use would be at the District and Resource Area level with summary information required by the Washington office.
- **Refer to Figure B-7 for sizing information**

Growth factors:

- The Wildlife program is relatively new and will grow moderately as existing data is entered and new data is collected. Only test data has been entered in RAIDS, therefore it will grow considerably as it is implemented.

Figure

Figure B-7. Wildlife Habitat improveme include fencing, planting, burning, reparian, wetlands and lake improvements, nest, roosts and others.

STATE	Barrier Removal (number)	Den & Nest Facilities (number)	Fence Modifications (number)	Instream Structures (number)	New Water Facilities (number)	Perch & Roost Structures (number)	Prescribed Burns (number)	Ramps/ Passes (number)	Water Facilities Improved (number)
Alaska	-	18	-	2	-	-	-	-	-
Arizona	-	-	20	-	30	-	8	-	20
California	123	25	2	55	36	8	13	-	1
Colorado	-	15	1	695	23	-	5	-	1
Idaho	5	39	4	22	13	6	6	-	50
Montana	-	161	21	9	9	18	4	2	22
Nevada	-	25	12	38	20	-	-	-	15
New Mexico	-	-	-	-	14	12	-	-	-
Oregon	1	37	1	23	10	-	3	-	15
Utah	-	12	3	10	39	30	11	1	9
Wyoming	-	2	1	6	17	-	7	-	-
Eastern States	-	-	-	-	-	-	-	-	-
Total	129	334	65	860	211	74	57	3	133

STATE	Protective Fencing (miles)	Spawning bed development (miles)	Streambank Stabilization (miles)	Habitat Disking, Chaining (acres)	Lake Improvement (acres)	Seeding (acres)	Prescribed Burning (acres)	Wetland Improvements (acres)
Alaska	-	1	1	1	-	2	-	-
Arizona	25	-	-	-	-	5,000	5,000	500
California	18	2	5	200	-	487	4,173	500
Colorado	4	-	-	386	25	1,960	6,420	30
Idaho	31	-	2	20	-	135	3,030	2,002
Montana	32	-	4	-	-	166	252	31
Nevada	12	-	12	-	-	-	-	600
New Mexico	2	-	-	-	1	-	-	1
Oregon	20	-	1	-	12	1,144	715	570
Utah	8	-	-	2,400	-	50	2,100	50
Wyoming	29	-	6	-	22	51	700	138
Eastern States	-	-	-	-	-	-	-	-
Total	181	3	31	3,007	60	8,995	22,390	4,422

Source: Wildlife Management - WO

Part 4: Existing Systems

Name: Integrated Habitat Inventory Classification System (IHICS)

Location: Denver Sevice Center, Denver Colorado

Hardware: Honeywell DPS-8/70 and microcomputers

Software: COBOL, APL, TEC, ASPEN/2

Telecommunications: BLM Network

Contact: Larry Peterson, (YA-470)

Name: Threatened and Endangered Species data base (T&E) Three hundred to five hundred species growing at the rate of 15 to 20% per year - used two or three times a week.

Location: Denver Service Center, Denver Colorado

Hardware: Honeywell DPS-8/70

Software: ASPEN/2

Telecommunications: BLM Network

Name: Riparian/Aquatic Information Data Summary (RAIDS)

Location: Denver Service Center, Denver, Colorado

Hardware: Honeywell DPS-8/70 and microcomputers

Software: ASPEN/2

Telecommunications: BLM Network

Systems being developed: Trends in Habitat Conditions Monitoring being developed by the Denver Service Center by specific habitat changes.

System to be Developed: Wildlife Tracking System

<<< BLM Functional Requirements >>>

Recreation and Wilderness Management

Part 1: General Information

Associated Program: Recreation and Wilderness

User Organizations: Division of Recreation, Culture and Wilderness
Division of Resource Management
Resource Areas

Owner/Operator/Maintainer: Division of Resource Management

Existing Automated System: DBase II developed on the Wang in the Washington office also resides in the States.

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Bureau manages public land resources in wilderness areas and for recreational usage. Recreation areas contribute to tourists economies in the Western states and in satisfying the growing public demand for outdoor recreation. Congress will designate Wilderness areas to preserve the natural environment by 1991. Wilderness management is very similar to recreation management which is described below.

Recreation management is focused on approximately 5% of the Bureau administered lands in 150 Resource Areas. These intensely used areas require direct supervision of recreational activities or corporative commercial and Bureau regulated recreation operations. High use areas include: 12 national wild and scenic rivers; 20 designated recreational, historic and scenic tracts (2000 miles); White Mountains National Recreation area; designated Off-land Vehicles (ORV) areas; and major portions of California deserts, King Range, and Steese National Conservation Areas.

In February 1984, a special recreation permit policy was adopted. It required all commercial and competitive users and in special areas, groups and individual users, to obtain permits and pay fees for recreation use. Regulations for special recreation permits were revised to reflect the new policy and published in August of 1984. Nearly 6,000 special recreation permits were issued in 1984 and fees collected for those permits exceeded $65,000.

Responsibilities for recreation management lies primarily with the Resource Areas. They are to:

- Ensure that recreation resources are in the RMP process
- Manage outdoor recreation use on public lands
- Monitor, evaluate and insure accomplishment of approved Annual Work plan items related to coordinating and guiding outdoor recreation management
- Develop, implement, and monitor Recreation Activity Plans
- Maintain liaison with other government agencies, recreation user groups and other organizations concerned with recreation management in the Resource Area.

The plans involved with recreation management are:

- Resource Management Plan
- Recreation Activity Plans which could be a Recreation Area Management Plan (RAMP) which are developed for special recreation areas or a Project Plan developed for sites and other project work. Information regarding plan development refer to the functional requirement on planning.

Following the development of a Recreation Area Management Plan and a Project Plan the Resource Area would develop a project survey. Design would be the next step followed by project construction.

The recreation function also involves designating and identifying trails and public land areas where off-land vehicles use can be authorized and to monitor the effects of this use on the land.

The recreational function also provides visitor services to include:

- Protecting and maintaining the Bureau's most valued and heavily used resources
- Protecting the visitor
- Reducing or eliminating conflicts between different types of use
- Encouraging visitor cooperation and involvement in management of resources. Each Resource Area manager is responsible for identifying the needs for visitor services, conducting use supervision and visitor contact, providing inner-agency coordination and addressing all the needs through the Annual Work Plan and program development. One of the means of delivering visitor services is through the use of patrols primarily by rangers. Areas in need of patrols are identified in the Recreational Management Plans.

The recreation function is also involved in Cooperative Management Agreements covering the protection of historic resources, snowmobile trail management, management of an off-road vehicle area and cave resource management. In 1984, nineteen such agreements were executed with user groups, conservation organizations, universities, and state and local governments. A sample cooperative agreement found in BLM manual 8362 was a seven page document defining responsibilities and agreements for both parties.

The recreational function also requires that BLM identify and protect visual values on public lands. The Resource Area manager maintains a continuing evaluation of visual values on public lands and insures that these values are adequately considered in land use planning. The coordination of Visual Resource Management (VRM) is assigned to one person in the Resource Area. In addition, one person is assigned in the District level to coordinate the VRM and one person at the State level is assigned to provide to visual design assistance on major projects and to conduct VRM training. Basic landscape design principles are involved; we did interview one landscape designer at a State office.

VRM involves:

- Inventory scenic quality for a Resource Area
- Identifying and describing cultural modifications to include visual intrusions and visual improvements
- Determining visual significance of modifications
- Evaluating the quality of the BRM using a scenic quality rating which is established in a BLM manual
- Identifying areas of critical environmental concern for scenic values.
- Summarizing visual impacts with a narrative which discusses intruding elements on the scenic resource such as mining or power lines.

To support this function, BLM needs an information system that will:

- Store management information on recreation sites such as: site name, location improvements, evaluation, monitoring, inclusion on AWP and RMP, public or congressional involvement
- Provide management reports and ad hoc query information
- Tracking information on permits and fees collected
- Design capabilities for Visual Resource Management and recreational site design would be helpful.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Recreation planning is a year round process with no obvious peaks or valleys.
- **Security/privacy:** There are no privacy constraints on recreation data
- **Response time:** Should provide easy access with same day reporting, on-line input and queries.
- **Interfaces:**
  - Information from the BLM Safety program
  - Information from the JDR system on improvements
  - Annual Work Plan information
  - RMP information
  - Information from public recreation groups and other government agencies in the form of bulletin boards
- **Reliability:** Normal business standards are satisfactory.

Major programmatic inputs:

- On Scenic Quality Field Inventory -- BLM Form 8400-1
- The Cultural Modification Inventory and Feature Contrast -- Form 8400-2
- Visual Resource Contrast Rating -- Form 8400-4
- In addition, there are forms to show the extent and nature of public concern about visual changes to places and objects, and a matrix for determining the visual sensitivity levels.

Major programatic outputs:

- Information for RMPs and EAs
- Recreation Activity Plans

Use of existing system:

- o **Number of users:** BLM employs approximately 167 people in recreation management at all levels of the BLM organizations. Four work at the Washington office, about 18 at the State offices (some with double duties in Wilderness functions), 53 at the District offices, and about 72 at the Resource Areas. The rest are seasonal employees.
- o **Amount of use:** Use of data would be moderate. Four work at the Washington office, about 18 at the State offices (some with double duties in wilderness, functions), 53 at the District Offices and about 72 at the Resource areas. The rest are seasonal employees.
- o **Distribution by office:** Recreation management is a resource area function and summary information should be available at the District, State, and Washington area levels.
- o **Refer to Figure B-8 for sizing information**

Growth factors:

- o It is anticipated that the recreation function will increase by 50% - 75% over the next ten years. Wilderness management will grow after 1991 when wilderness areas are to be defined.

Part 4: Existing System

Name:	Recreational Data Base
Location:	Washington Office and State Offices
Hardware:	Wang PC
Software:	dBase II
Telecommunications:	None
Contact:	Roger Smidt - (WO-341)

Name: Wilderness Tracking System

Location: DSC, Denver, Co.

Hardware: Honeywell DPS-8/70

Software: ASPEN/2

Telecommunication: BLM Network

Figure B-8. BLM initiated a recreation permit policy in 1984 and collected about $40,000 in the first year.

Leases in Force as of September 30

State	Total Number	Total Acres	Revenue Collected
Alaska	25	707	$ 520.00
Arizona	90	6,730	5,087.00
California	123	N/A	N/A
Colorado	34	2,436	981.00
Idaho	83	8,446	3,011.19
Minnesota	1	1	0.00
Montana	18	681	249.00
Nevada	79	2,890	25,498.00
New Mexico	79	8,680	2,061.50
North Dakota	1	40	10.00
Oklahoma	1	13	0.00
Oregon	55	3,478	15.00
South Dakota	4	634	324.00
Utah	90	12,948	1,592.00
Washington	16	1,476	0.00
Wyoming	60	4,406	328.85
TOTAL	759	53,566	39,678.04

Source: Public Land Statistics - 1984

Recreation work hours are spent on the following functions:

Planning	11%
Maintenance	30%
Monitoring	12%
Inventorying	2%
Permits	12%
Studies	1%
Administration	32%

Source: WO-340

<<< BLM Functional Requirements >>>

Cultural Resource Management

Part 1: General Information

Associated Program:	Cultural Resource Program
User Organizations:	Division of Resource Management (DO) Resource Areas
Owner/Operator/Maintainer:	Resource Areas
Existing Automated System:	Miscellaneous Aspen/2 data bases developed independently by various States (found in Montana)

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Cultural Resource program identifies cultural resources and evaluates plans for the use of cultural resources under BLM jurisdiction. Approximately 17,000 cultural properties have been evaluated and classified in the categories of: socio-cultural use, current or potential scientific use, management use, and conservation for future use.

Inventories of existing cultural resource data have been compiled on 75% of BLM administered lands. Sample inventories were completed on five million acres in 1984. From these inventories it was determined that 320 BLM cultural properties be placed on the National Register of Historic Places. An additional 400 have been nominated for possible inclusion and an estimated 14,000 properties have been evaluated as possibly suitable for nominations. The list of cultural properties is increasing at a rate of 1,000 properties per year. The resource program also protects threatened and fragile properties by patrolling, posting signs, erecting fences, and through site stabilization. More than 35,000 cultural properties are under BLM protection.

In order to provide scientific research on these properties, BLM issues and monitors hundreds of archaeological permits every year. These permits allow for inventory and in some cases, excavation, and include paleontological resources.

While BLM Manual 8100 specifies that District managers are responsible for directing and implementing and maintaining cultural resource programs and made no mention of the Resource Areas, we found one archaeologist in a District office in Oregon but in Colorado and Montana the archaeologists were in Resource Areas. Responsibilities for cultural program functions would lie either in the District or the Resource Area depending upon the State. Staffing comprises: 2 archaeologists in the Washington Office; 14 archaeologists in the State Offices; 53 archaeologists in the District Offices; and 60 archaeologists in the Resource Area Offices. In addition there are three historians, two anthropologists, and one architectural historian.

The cultural resource inventory and evaluation process is used as input to the Socio-economic Profile (SEP), Planning Area Analysis (PAA), the Unit Resource Analysis (URA) and the Resource Management Plan (RMP).

Cultural resources has classified their inventories into three groups: the existing data inventory, a sampling field inventory and an intensive field inventory. The existing data inventory provides a narrative overview from existing cultural information and a compilation of cultural site record data. The sample field inventory locates and records (from the surface and exposed profile) all cultural resource sites within a defined area in order to predict cultural resources in the area. This is the type of inventory required for planning efforts. The intensive field inventory locates and records (from the surface and exposed profile) all cultural resource sites within an area.

The procedures taken for an existing data inventory are to:

- Define the study area
- Cover the whole study area regardless of land ownership but placing major emphasis on those resoures on or adjacent to BLM administered land
- Compile a general background of data and bibliographies on the study area
- Undertake a brief field reconnaissance study to become familiar with the area
- Draft a working thematic outline of the pre-history and history of the study area
- Consult all available bibliographies, documents, literature, manuscripts, maps, museum collections, and other sources regarding the area
- Consult with professional and amateur historians and archaeologists or local people knowledgeable about the history of the area
- Prepare a cultural resource overview with appropriate graphics and appendices

To support this function, BLM needs an information system that will:

- Store and access the inventories and bibliographics of BLM sites and access other archaeological databases, State and National

- o Provide text entry of study material collected (word processing)
- o Provide automated graphics of sites (not mandatory but highly desirable)

Part 3: Sizing and Performance Requirements

Performance requirements:

- o **Operating schedule/deadlines:** Archaeological site inventory is predominately a summer month activity however data entry could be done during the winter months. There are no stringent deadlines on this information.
- o **Security/privacy:** Archaeological site information is confidental and would require security.
- o **Response time:** Should provide for easy convenient use such as same day turnaround, report requests, online editing of input, and query capabilities.
- o **Interfaces:**
  - -- Information sent to State Historic Preservation Office (SHPO) for each State
  - -- Could use information from the Inter Mountain Archaeological (IMAC) system out of the University of Nevada
  - -- Legal land description and characterization data should be available
  - -- Case action file should be available
  - -- Information from the Resource Management Plan
  - -- Bibliographic information on archaeological or historical literature would be useful
- o **Reliability:** Normal business standards for reliability are satisfactory.

Major programmatic inputs:

- o Inventory of archaeological sites
- o Inventory of paleontological sites
- o Narrative descriptions of sites found and other study information

Major programatic outputs:

- Information for the Resource Management Plans and other BLM plans
- Site information sent to SHPO and eventually to the Smithsonian
- Studies on Archaeology and Paleontology
- Information for Case actions

Use of existing system:

- **Number of users:** BLM now employees about 108 people in the cultural resource program. The information is actually entered by the archaeologists at the District or Resource Area level.
- **Amount of use:** Use of cultural resource data is moderate depending upon the case actions and the Resource Management Plans and other study efforts being developed.
- **Distribution by office:** Distribution of cultural data should be at the District or the Resource Area level.

Growth factors:

- BLM expects the Cultural Branch to double within the next 10 years.

Part 4: Existing System

Name:	Various ASPEN/2 Data Bases
Location:	DSC, Denver Colorado
Hardware:	DPS-8
Software:	ASPEN/2
Telecommunications:	BLM Network

<<< BLM Functional Requirements >>>

Research and Studies

Part 1: General Information

Associated Program:	Rangeland Forestry Planning Wildlife Recreation, Culture and Wilderness
User Organizations:	Program Offices at Washington Office Division of Lands and Renewable Resources Division of Resource Management
Owner/Operator/Maintainer:	Program Offices at Washington Office Division of Lands and Renewable Resources Division of Resource Management
Existing Automated System:	-- R&D Tracking System -- Modeling System such as the economic demographic model used in Montana -- The National Oceanographic System for climatic studies used in Oregon at the Lakewood District office -- Various data base systems

---

Part 2: Description of Overall Program, Requirement, and Current Procedures

Studies are an integral part of BLM workload and while they generally are used in preparation for a Resource Management Plan or an Environmental Impact Statement they also exist as a separate research and development function. Several hundred studies are tracked by the Resource Sciences Division within the Land and Renewable Resources Division of BLM, but this may not constitute the entire corpus.

Studies are performed in all program areas of the Lands and Renewable Resources Division. Some are issue driven such as those pertaining to recreation vehicle use in dessert land and some are developed due a specific problem such as the leaching of selinium in Montana which was due to excessive irrigation and was posioning the fish.

Studies require a lot of information. BLM has developed a variety of approaches to get data. Some studies, such as the one on demographic and economic factors in Montana, use automated modeling systems developed specifically for the problem by universities in the area. Other studies such as the one on climate found in Oregon at the Lakewood District offices used a national system to collect information.

It is also difficult to separate studies from inventories. Many so called "studies' are a collection of information about a certain species of animals or a certain type of tree or soil conditions on range lands. The study could consist of collecting information on a specific environmental element to be used during the planning process or in determining whether or certain land action should be granted to a requestor. Study information can consist of maps, collection of grasses such as the herbarium in the Prineville District office, an article written on the dangers of selinium poisioning to fish and the causes of the selinium concentration, on the effects a mining lease would have on demographics and the natural habitats.

There are no definitive steps to perform a study. It can be done either as a part of an everyday job for a soil scientist or it could be assigned as the result of a pending case action or RMP. BLM is encourging it's scientist to register studies with the Research Science group in Washington so that certain studies can be allocated special funds and tracked through development up to the completion of the final report. Currently about 100 such studies are processed by Research Sciences every year. See the RS functional requirement for details.

To support this function, BLM needs an information system that will:

- o Provide a access to a wide variety of databases both in and outside of BLM
- o Provide sophisticated calculations and modeling tools

Part 3: Sizing and Performance Requirements

Performance requirements:

- o **Operating schedule/deadlines:** There are no definitive schedules or deadlines in the study function.
- o **Security/privacy:** Study information is not confidential and has no security requirements
- o **Response time:** System should be available for one day turn-around on reports, and online updating and query.
- o **Interfaces:** The study function would require use of all BLM program area systems and perhaps even some of the administrative systems.
- o **Reliability:** Normal business standards apply.

Major programmatic inputs:

- o Undefinable - depends upon the nature of the study for major study outputs.

Major programmatic outputs:

- o Input to RMP, technical manual, or published study.

Use of existing system:

- o **Number of users:** It is difficult to estimate the number of people performing studies; they exist at all levels of BLM; this includes the Washington office, the State offices, the District offices, and the Resource Areas.
- o **Amount of use:** BLM studies would require a moderate use of all BLM systems and a concentrated heavy use of certain modeling systems during certain peak times of the study development.
- o **Distribution by office:** All BLM offices
- o **Refer to Figure B-9 for percent of workload spent on studies**

Growth factors:

- o BLM studies are continuous process but may increase as modeling and other automation become more available. Also the recent attempt to track studies and share the information indicates that more emphasis is being placed on studies.

Part 4: Existing System

The following systems are used in connection with studies:

- o The R&D tracking system,
- o The Economic Demographic model used in Montana, runs on an IBM 370 in Lincoln, Nebraska, which is accessed through an Atlantis TTY dumb terminal through a 300 baud communications line.
- o The ED model developed at Colorado State University, also used in Montana,
- o The National Oceanographic System in Oregon
- o Probably countless others which we didn't happen to come face to face with.
- o No specific information as to hardware or location or software was collected for these systems.

Figure B-9. Studies are performed by at least five program areas within Lands and Renewable Resources

Program	Percent of Workload
Range	16%
Forestry	7% (genetics)
Wildlife	Unknown
Wilderness	35%
Recreation	1%
Planning	Unknown

Appendix C

Functional Requirements for Management Services

Immediately following are descriptions of the functional requirements identified for the Management Services area. The descriptions include the associated programs, current automated systems supporting the function, a description of the function and how it is performed now, the current performance and sizing requirements, and finally the details on supporting systems.

They are based on interviews with BLM staff and BLM internal documentation. These listings do not necessarily imply that the current function should be automated. Rather, they are an attempt to accurately describe the state of the functions in these areas with regard to automated support.

Appendix C

Figure B-9. Studies are performed by at least five program areas within Lands and Renewable Resources

Program	Percent of Workload
Range	16%
Forestry	7% (genetics)
Wildlife	Unknown
Wilderness	35%
Recreation	1%
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Appendix C

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<<< BLM Functional Requirement >>>

Safety Inspection and Reporting

Part 1: General Information

Associated Program:	Safety
User Organizations:	Safety Staff and field representatives
Owner/Operator/Maintainer:	Safety Staff (WO-811)
Existing Automated System:	Safety Records system for Utah and Oregon

---

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Safety Staff is responsible for setting safety policy and monitoring inspection activity in the State Offices. The State Offices conduct all safety inspections. Safety responsibilities are sometimes delegated to the District level by the States. The BLM Safety Staff is comprised of a Safety Staff Chief in the Washington Office, one full-time representative in approximately half of the State Offices, and part-time representatives for the other half. The Safety Staff Chief conducts three Assistance Procedure Reviews (APRs) per year to review safety inspection procedures in the states.

There is a high turnover within the Safety Staff, particularly at the District Office, so training is very difficult. Information volume is very low, only one or two contacts a month between the states and Washington. Most of the BLM Safety records are kept with the rest of DOI's safety records on the U.S. Geological Survey computer. The exceptions are the State Offices of Oregon and Utah, which monitor their own state programs. Their records are on the Denver Service Center computer.

For the safety reports, the Safety Chief requires man-hours and vehicle mileage. He receives man-hours from the State Offices by mail or phone approximately once a quarter. The Denver Service Center sends mileage reports on the Property System reports to the Division of Administrative Services (WO-850) which passes the numbers on to Safety. He supplies these gross numbers to the Department of the Interior for them to manipulate and report to OSHA.

To support this requirement, BLM needs a method of trapping vehicle usage and man hours as they are reported and accumulating the information for the quarterly report.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Quarterly manhours and mileage are required for a safety report to DOI.
- **Security/privacy:** Security is not a concern.
- **Response time:** Quarterly reports would be adequate.
- **Interfaces:** Property system in DSC, DOI safety statistics on USGS computer, and Oregon/Utah Safety Records at DSC.
- **Reliability:** Normal business standards for reliability factors would be adequate.

Major programmatic inputs:

- Personnel manhours
- Vehicle usage from Property Property Management

Major programatic outputs:

- Safety figures for DOI
- Review of state safety procedures.

Use of existing system: No direct use of any existing system by Washington Office. Oregon and Utah keep Safety Records on DPS-8 in DSC with two or three users total monthly.

Growth factors: BLM does not anticipate increased emphasis on safety. The Department is considering consolidating safety activity into the Office of the Secretary as part of Reform 88.

Part 4: Existing System

Name:	Safety Records System
Location:	Denver Service Center
Hardware:	Honeywell DPS-8/70 Mainframe
Software:	ASPEN/2
Telecommunications:	BLM Network

<<< BLM Functional Requirement >>>

Personnel and Payroll Management

Part 1: General Information

Associated Program:	Personnel
User Organizations:	Personnel staff at the Washington Office, State Offices, District Offices, and Denver Service Center
Owner/Operator/Maintainer:	DSC maintains software to produce input tapes for the Bureau of Reclamation's Pay/Pers computer in Denver; Vacancy Listing in Washington Office; SF-52 Tracking Systems in some State Offices; Table of Organization in some State Offices
Existing Automated System:	PAY/PERS, Vacancy List, SF-52 Tracking, Table of Organization

---

Part 2: Description of Overall Program, Requirement, and Current Procedures

Personnel processing is the processing of employee actions such as hiring, firing, promotions, and Time and Attendance for payroll. All Personnel actions are officially initiated through a Form 52, Personnel Action Request. In practice, the action is frequently requested verbally on an informal basis first and the Form 52 comes later however there is always a Form 52 for each action.

The Washington Office Division of Personnel and Training consists of four branches: Employment, Pay and Position Management, Employee Development, and Personnel Services. Employment is responsible for employee management activities such as hiring and firing actions, determining employee qualifications, also known as Knowledge, Skill, and Abilities (KSA), recruiting, internal placement, and employee relations.

The Washington Office division is responsible for all Senior Executive Service (SES), appointments, and political appointments; all actions concerning positions GS 14 and above; and establishing promotion panels. The Washington division performs all employee relations case work not handled at the State Office level, usually high-level adverse actions where the deciding official must be higher than the State Office Director. They provide policy guidance on employee related issues, via phone communication with the corresponding State Office staff, and through development of Bureau manual supplements and other instructional memoranda.

Washington Office maintains an automated vacancy list of bureau and Department-wide vacancies of GS 13 and above on a Washington Office PC. It is sent via DialComm, BLM's electronic mail service, to the State Offices. The Personnel Management Committees in the state offices use the vacancy list to identify opportunities. An Automated Vacancy System, implemented in September 1985 on the DPS-8/70, provides a list of all BLM position openings.

WO produces department level reports on Reductions in Force (RIF) monthly, quarterly, and annually. The 113 Report, a detailed personnel breakdown, is automatically produced by the PAY/PERS system, but they must certify to its accuracy.

BLM workmonths complicate the reporting process. Rather than the traditional 12 months per position, the BLM budget allocates 10 workmonths per position for a fund and allocates the remaining 2 months to holiday and leave (including annual leave, sick leave, administrative leave, lump sum leave payments, holidays, and severance pay). Since an employee often charges to many projects or funds during the year depending on where he worked during a pay period, this approach avoids charging a fund for the leave expense of staff who have actually worked on many programs and charged many different funds. This concept is not fully understood by some staff and sometimes results in confusion, particularly in using status reports.

At the State Office level, Personnel staff conduct employee management functions, and recruit for GS 12 positions and below. They also make appointments for GS 13 through 15, subject to Washington Office approval.

As with many other programs, individual States may be organized slightly differently. For example, the distinction between position and personnel management is sometimes lost at the State Office, depending on the State. Colorado maintains the distinction with a Staffing Branch and a Classification Branch but Oregon divides responsibilities by job category to two teams who conduct both classification and staffing for those categories.

Most States delegate temporary and summer personnel staffing authority to the District Offices, but not all. For example, Eastern States conducts all temporary, summer, and permanent employee actions and Colorado State Office sends its summer employee paperwork to the Denver Service Center.

The State Offices mail in T&A forms to DSC where they are encoded and passed by data link to PAY/PERS. The Bureau of Reclamation operates PAY/PERS for the payroll and personnel functions of most DOI bureaus, including BLM.

The primary automated support for all personnel-related functions, including position management, is PAY/PERS at the Bureau of Reclamation. PAY/PERS provides a lot of supporting data, several different modes of input, and a query language to extract information but it also has some limitations. For example, some field staff feel the reports generated by PAY/PERS are too voluminous and not very useful. One State Office estimated that they do not use 80% of the reports.

The data items on one particular report, the Table of Organization, include highly private information such as social security number and birth date. A sanitized listing can be obtained by a query developed by DSC, but not all State Offices were aware of it. To avoid distributing sensitive information some States reformat the Table of Organization information before they distribute it.

PAY/PERS is not fully understood by all BLM field users; turnover is high and also some use the system infrequently. For example, some users reported being reluctant to enter advanced information on an action because they claim PAY/PERS has "lost" data in the past when it was entered too early. However, the PAY/PERS support staff reported that only SF 50 forms have any time limit, three days. SF 50s are generated after a valid SF 52 has been processed. PAY/PERS only retains them for three days because the high volume makes longer retention impractical. The PAY/PERS staff are unaware of any data being lost by being entered early.

PAY/PERS does have some limitations. The new version (Automated Adjustments just implemented a history file in January 1986. No prior history data will be input. Some Personnel staff keep "Seven Cards", manual employment histories, to track personnel action history. PAY/PERS also cannot provide some of the statistics on women or minorities use by EEO, such as a skills inventory. Queries generate coded information instead of their English language equivalent.

For some award actions, the employee must be entered into the system, even if the employee has retired or been fired so the employee can be given the award. The employee temporarily "reappears" on the organizational chart.

Input and query can be cumbersome depending on the type of entry used. BLM States have a choice of three different input modes: Run term (unprompted), pre-edit (completely prompted) or Constor data entry device with a pre-edit capability. Only States using Comstor prior to PAY/PERS installation have that data entry option. Colorado developed a pre-edit to PAY/PERS on the Level 6 which they are modifying to use with Version AA; it is available to other States and some do use it.

In addition to the PAY/PERS system, some states have SF-52 Tracking Systems which track their personnel actions. All personnel statistics are done by hand. Although PAY/PERS has statistics available through the Query language, manual compilation of the statistics was easier for the users.

The field staff feel BLM is losing money by not filling vacancies rapidly enough. In Oregon alone, they could save 10 - 12 man-years at a GS-9 level if they could get the process automated. However, some contend that BLM plans lapsed positions in the Budget.

To reduce attrition, the States would like to be able to collect information on why people leave BLM. For example, female forestors in Oregon have a high attrition rate. If BLM can identify the reasons for attrition, they may be able to reduce it. This information is available in paper form, but they need it electronically stored to analyze it easily.

State Office Personnel staff also see a need for a skills bank of ratings and qualifications. This skill information is lost when people unsuccessfully apply for jobs. They would like to be able to transmit this information between the various bureaus within the Department of the Interior as the same classifications apply throughout the department.

To support this functional requirement, BLM ADP systems must provide easy access to employee personnel action history, employee qualifications, provide timely and complete validation of personnel transactions, and close coordination with position management. They must provide easy entry of T&A sheets and reliable payroll generation. They must discriminate between reports for distribution and private reports and control report content accordingly. PAY/PERS will most likely provide the basic data and much of the capability necessary to support this requirement.

Part 3: Sizing and Performance Requirements

Performance requirements:

- Operating schedule/deadlines: T&A sheets are required every two-week pay period. Personnel is allowed three days to process a personnel action before it is deleted from the system.
- Security/privacy: The personnel and payroll management function involves private information which must be secured from unauthorized access for display or changing. Also, reports generated by this function are subject to the Privacy Act.
- Response time: On-line preliminary edit would reduce turnaround time. The output reports must be timely but are not time critical with the exception of payroll.
- Interfaces: DSC transmits payroll data directly to the Bureau of Reclamation. Some EEO data is available to the States. DSC maintains a Bureauwide file but each State has own query file which is replaced when the DSC recycle file is run each night.
- Reliability: Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- SF 52 Requests for Personnel Actions
- T&A sheets

Major programmatic outputs:

- Monthly, quarterly, and annual reports
- SF 50 Personnel Actions
- Payroll

Use of existing system:

- **Number of users:**

  70 - 80 PAY/PERS

  3 - 5 Table of Organization users per State with reports distributed to their management.

  3 - 5 SF 52 Tracking System users per State where a system is available.

- **Amount of use:** Permanent personnel work is daily and steady in the State Offices with seasonal surges in District Offices.

- **Distribution by office:** Washington Office, Denver Service Center, State Offices conduct permanent personnel processing. There is seasonal activity in some District Offices due to temporaries and seasonals.

- **Refer to Figure C1 for sizing information**

Growth factors: The Personnel Staff is unlikely to grow but reporting requirements and Reform 88 pressure may generate more system complexity and mandate higher ADP usage.

Part 4: Existing System

Name: PAY/PERS

Location: Bureau of Reclamation and Denver Service Center

Hardware: CDC Cyber

Software: COBOL

Telecommunications: BLM Network

Contact: Mr. Richard Pixton
Mr. Jack Blickley, Payroll

Name: SF 52 Tracking System

Location: DSC (Montana); Oregon State Office

Hardware: Honeywell DPS-8/70 in DSC; Wang PC

Software: ASPEN/2; Condor, PC-DBMS

Telecommunications: BLM Network

Name:	Vacancy Listing
Location:	Washington Office
Hardware:	Wang PC
Software:	Condor, PC-DBMS
Telecommunications:	BLM Network

Name:	Table of Organization
Location:	Montana and Oregon State Offices
Hardware:	Wang OIS
Software:	Wang Word Processing
Telecommunications:	N/A

Figure C-1
Personnel and Payroll Management Sizing Information

	Number of Employees	Temp/ Seasonals	Estimated Number of Employee Actions
Washington Office	461	25	1,022
Denver Service Center	529	---	1,058
Alaska	819	300	2,838
Arizona	400	40	960
BIFC	150	40	460
California	613	180	1,946
Colorado	684	140	1,928
Idaho	451	280	2,022
Montana	572	175	1,844
Nevada	509	250	2,018
New Mexico	730	70	1,740
Oregon	1,474	300	4,148
Utah	555	100	1,510
Wyoming	723	200	2,246
Eastern States	214	10	468
TOTAL	8,884	2,110	26,208

Source: WO-830 Employment Branch, does not include political appointees or executive service.

<<< BLM Functional Requirement >>>

Position Management

Part 1: General Information

Associated Program:	Personnel
User Organizations:	Personnel staff at the Washington Office, State Offices, District Offices, and Denver Service Center
Owner/Operator/Maintainer:	DSC maintains software to produce input tapes for the Bureau of Reclamations computer in Denver; SF52 Tracking Systems in some States; Table of Organization in some States
Existing Automated System:	PAY/PERS; SF 52 Tracking; Table of Organization

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Part 2: Description of Overall Program, Requirement, and Current Procedures

Position management is the set of activities associated with classifying and auditing positions to be filled by an employee in terms of responsibilities, grade level, skill requirements, and salary. BLM is required by DOI to audit 25% of their positions each year which they report to Interior on a semi-annual cycle.

Merging MMS functions into BLM created a position and grade problem within BLM. For positions in BLM and MMS doing equivalent work, the MMS positions had been set at a higher grade. Both BLM staff and transferring MMS staff were upset. They are still trying to rectify a lot of the grading problems.

BLM has also been criticized for their "Grade Bulge" -- too many staff at grades GS 11 through GS 15. Monitoring the "Grade Bulge" produces a lot of reporting requirements. The state offices must report quarterly on their organizational breakdown concerning the higher grades. The report formats vary substantially.

Due to these concerns, BLM is now placing major emphasis on position management. They are looking at their overall organization and evaluating its effectiveness. OPM is also tracking the "Grade Bulge" with its systems which do not always correspond to BLM's. There is a lot of interest in producing a reliable organizational chart. BLM's primary complaint with OPM's monitoring activity is that the OPM files do not credit them with vacancies they have abolished in their organization, making the grade bulge look worse than it is.

The Washington Office Division of Personnel and Training consists of four branches: Employment, Position and Pay Management, Employee Development, and Personnel Services. The Position and Pay Branch performs position-related activities, such as position classification and management, pay administration, management evaluation of positions, and labor management relations. Similar to the Employment Branch, Pay and Position are responsible for GS 13 positions and above in the Bureau except for SES positions. (The Employment Branch handles all the SES related activities.) They produce position descriptions, evaluation statements, and organizational charts. They have essentially the same relationship with the State Offices regardless of the particular action being taken.

At the State Office level, Personnel staff work with State Office management to classify proposed positions or reclassify positions which have changed. In the States visited, all position audits were performed without any automated support. It appears that fields are available but are unused.

As with many operational programs in BLM, the responsibilities for position management may be divided differently from State to State. The distinction between position and employee management is sometimes lost at the State Office, depending on the State. For example, Colorado maintains the distinction with a Staffing Branch and a Classification Branch but Oregon divides responsibilities by job category to two teams who conduct both classification and staffing for those categories. However, Colorado position management will be merged with DSC's around June 1986. Similarly, the ESO branch was merged with the Washington Office (AA-834) in March 1986.

Standardizing positions and ratings is difficult and occupies a lot of staff time. Some State Offices do not transmit SF 52s directly to the Denver Service Center and receive them electronically from the District Offices, although direct transmission is possible. They think this would help them standardize positions and ratings which in Oregon alone takes 30% of 8-10 peoples' time.

The primary automated support for all personnel-related functions, including position management, is PAY/PERS at the Bureau of Reclamation. PAY/PERS provides a lot of supporting data, several different modes of input, and a query language to extract information but it also has some limitations. For example, some field staff feel the reports generated by PAY/PERS are too voluminous and not very useful. One State Office estimated that they do not use 80% of the reports.

PAY/PERS organizational charts do not accurately reflect the organization. Temporary promotions show up on organizational charts as vacancies, and positions which have been eliminated show up as vacancies. Personnel offices like Montana's create their own organizational charts on their word processing systems or their Level 6 computers because they feel the PAY/PERS organization charts are not reliable and too cumbersome to use.

For some award actions, the employee must be entered into PAY/PERS, even if the employee has retired or been fired so the employee can be given the award. The employee temporarily "reappears" on the organizational chart.

BLM also produces retirement calculations and mailing labels. The latter are used for a variety of actions such as union activities, personnel actions, and organizational charts.

The States would like a historic file of positions abolished, positions upgraded, and positions to be audited with a tickler for important dates. Position classifiers in the field have suggested another time saver would be a store of position description paragraphs with point values which count toward a position grade. When the classifier puts several of these paragraphs together to describe the job, the system would automatically calculate the grade level. Additional custom paragraphs could be added to fine-tune the classification and arrive at a final grade level. In this way, the classifier could focus on position audits rather than grading. The PAY/PERS system provides a field for use in auditing positions but it is not used.

To support this function, BLM needs a system which accurately reflects the current organization and assists the position classification staff in determining grade and salary based on skill requirements. They also need a method of sharing classification data across the bureau to reduce duplication of effort in position classification.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:**
  - Report to DOI on position audits quarterly
  - Report quarterly to BLM management and OPM on Grade Bulge.
- **Security/privacy:** Security measures comparable to commercially available personnel systems is required. Also, the organization charts and other publications matching employee to position are subject to the Privacy Act.
- **Response time:** On-line preliminary edit when used would reduce turnaround time. The output reports must be timely but are not time critical.
- **Interfaces:** DSC sends data via a data link to the Bureau of Reclamation. Organization and position statistics are needed by EEO in BLM.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- o SF 52 Requests for Personnel Actions
- o Position descriptions for existing positions

Major programmatic outputs:

- o Quarterly, and annual reports on position audits and Grade Bulge status.
- o New, redefined, and eliminated positions
- o SF 50 Personnel Actions

Use of existing system:

- o **Number of users:**

  70 - 80 PAY/PERS

  3 - 5 Table of Organization users per State with reports distributed to their management.

  3 - 5 SF 52 Tracking System users per State where a system is available.

- o **Amount of use:** Daily, steady workload for permanent personnel work in State Offices, seasonal surge in District Offices.
- o **Distribution by office:** Washington Office, Denver Service Center, State Offices conduct position management for permanent staff. There is seasonal activity in some District Offices due to temporaries and seasonals.
- o **Refer to Figure C2 for sizing information**

Growth factors: The Personnel Staff is unlikely to grow but reporting requirements and Reform 88 pressure may generate more system complexity and mandate higher ADP usage.

Part 4: Existing System

Name: PAY/PERS
Location: Bureau of Reclamation
Hardware: CDC - Cyber
Software: COBOL
Telecommunications: BLM Network

Name: SF 52 Tracking System
Location: All State Offices
Hardware: Honeywell DPS-8/70 in DSC; Wang PC
Software: ASPEN/2; Condor, PC-DBMS
Telecommunications: BLM Network

Name: Table of Organization
Location: Montana and Oregon State Offices
Hardware: Wang OIS
Software: Wang Word Processing
Telecommunications: N/A

Name: Summer Hire System
Location: Denver Service Center
Hardware: DPS-8/70
Software: COBOL
Telecommunications: BLM Network

Figure C-2. Position Management

	Number of Positions
Washington Office	499
Denver Service Center	571
Alaska	885
Arizona	432
BIFC	162
California	662
Colorado	739
Idaho	487
Montana	618
Nevada	550
New Mexico	788
Oregon	1,592
Utah	599
Wyoming	781
Eastern States	231
TOTAL	9,556

Source: WO-830 Employment Branch

<<< BLM Functional Requirement >>>

Training

Part 1: General Information

Associated Program:	Personnel
User Organizations:	Personnel development officers in Washington Office, State Offices, District Offices, and Denver Service Center
Owner/Operator/Maintainer:	Locally maintained in State Offices, data entry at the District Office level and above
Existing Automated System:	Washington Office Phoenix Training Course Catalog; State Office Training Tracking Systems on the Denver Service Center DPS-8 on ASPEN; Oregon Wang-PC Training Tracking System

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Part 2: Description of Overall Program, Requirement, and Current Procedures

Employee development, or training impacts the ADP systems in BLM from two perspectives: training tracking systems generate CPU workload and ADP training determines how effectively the ADP systems are used. All training in BLM, regardless of subject matter, is tracked at the State Office to determine if staff are being properly developed and training funds properly spent. ADP systems are very useful in tracking training.

Training is conducted in three separate tiers: bureau sponsored training at the BLM Training Center, State Office sponsored bureau-wide or state-specific training at the State Office, and District-sponsored training at the State Office, usually in the form of video centers.

Limited computer-assisted training is also available. The Denver Service Center provides ten computer-assisted training courses. The Boise Interagency Fire Center also provides computer-assisted training for fire fighting.

The Performance Evaluation Branch in the Washington Office is reponsible for training bureau-wide, attending outside government meetings on training personnel, and incentive or outside awards. BLM Washington Office provides the Office of Personnel Management (OPM) an Annual Training Report and an Annual Incentives Award Report for BLM.

The BLM Training Center is located in Phoenix. The Washington Office maintains a training catalog of courses offered by Phoenix using ASPEN on the Denver Service Center DPS-8. State Offices also contribute training information. This system contains the name of the course, the trainees, and the date it was conducted. The States do not have access.

The extent of state office training, training records, and training priorities varies widely from state office to state office. Some state offices have good training plans, some have partial or tentative plans, and some have no plan whatsoever.

Unlike the other personnel functions, training receives no support from PAY/PERS. The pre-PAY/PERS system produced comprehensive training reports, but PAY/PERS does not.

Each State Office has Employee Development Specialists responsible for training. Managers complete SF182's to nominate their staff for training courses. Theses forms are entered at either the District Office for District and Resource Area staff, or the State level for State Office staff. The Denver Service Center (DSC) and Washington Office (WO) are treated as State Office equivalents concerning training nominations and tracking. The Boise Interagency Fire Center (BIFC) is treated as a District Office of DSC.

Some of the State Offices, such as Colorado and Montana, have ASPEN training data bases at DSC and maintain their training plan and nominations for training there. These can be extensive. For example, Montana uses their system to track per diem, travel, and tuition costs associated with training for each person in each course as well as attendance. Each student generates a new record for each course they take. Other states, such as Oregon, maintain their training records on Wang-PC's using PC-DBMS software such as Condor or Revelation.

The states track these activities to avoid losing or overcommitting training funds. Some go beyond tracking attendance and SF182's. Oregon plans to expand their system to include a tickler system for training nominees. They lost some of their training funds in the past because people scheduled for training were not reminded of the class in time to attend. They hope this tickler system will avoid losing these funds.

In every State, District, and Resource Area visited, ADP training was mentioned as a major concern. Even in field offices with little current capability, the staff were concerned that little training would be made available. Additional equipment without training is not very useful to them. ADP-specific training has an immediate impact on the effectiveness of ADP systems in the hands of users.

BLM field staff frequently receive software or access to software for which there is no training made available and no documentation on how to use the system. For example, the Automated Personnel Property System arrived in the Lewistown District Office in Montana without any prior notice and with no documentation on how to use it. In Oregon, some of the staff operating PAY/PERS have never received training. They have learned by trial and error.

Since PAY/PERS is difficult for a trained users to use and it also only catches one error at a time, lack of training is having a major impact on the staff's ability to perform well.

To support employee development, BLM needs a method of developing training plans in a consistent format, identifying the training resources available and training requirements, and tracking training activity against training plans. Given BLM's intent of increasing technology utilization and modernizing the ADP systems, training should receive more emphasis in the near future.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Seasonal demand for training data entry, peaking at the beginning of the fiscal year.

  Annual Training Plan for BLM required by Office of Personnel Management.

- **Security/privacy:** Normal restriction of access to only Personnel Development staff would be satisfactory. No extraordinary security or privacy requirements.

- **Response time:** On-line response not necessary. Data is not volatile.

- **Interfaces:** Training availability system maintained by Washington Office should be linked to State Office training tracking systems.

- **Reliability:** Normal business standards for reliability would be satisfactory.

Major programmatic inputs:

- State Office training plans - SF 182's, including budget.
- Training materials and courses available

Major programatic outputs:

- Annual Training Plan
- Training progress reports

Use of existing system:

- **Number of users:** For ASPEN Training Tracking System, less than 70 with approximately 50 being data entry.

The Training Catalog for the Washington Office has few users all in WO.

- o **Amount of use:** Each State generates between 75 and 200 records with peak data entry occuring in the fall at the start of the fiscal year.

  The Oregon Wang-PC system has a similar data entry pattern but more records than most states due to their higher staff level.

- o **Distribution by office:** A catalog of courses is used by the Washington Office. ASPEN Training Tracking applications are used by some States with data entry at State and District Office levels. A Wang-PC system is used by Oregon State Office.

- o **Refer to Figure C3 for sizing information**

Growth factors: Training will be required for the equipment and software acquired from outside vendors as well as custom-BLM applications developed in the field and at DSC.

Implementation of new ADP equipment and the development of software by field personnel of general use to other field offices is creating a serious need for ADP-specific training. This will become even more serious as the new system is procured and implemented and as field personnel learn about the ADP resources available to them.

Part 4: Existing System

Name:	State Training Tracking Systems (Colorado, Montana)
Location:	Denver Service Center
Hardware:	Honeywell DPS-8/70
Software:	ASPEN
Telecommunications:	BLM Network

Figure C-3
Training
Sizing Information

	Number of Staff
Washington Office	461
Denver Service Center	529
Alaska	819
Arizona	400
BIFC	150
California	613
Colorado	684
Idaho	451
Montana	572
Nevada	509
New Mexico	730
Oregon	1,474
Utah	555
Wyoming	723
Eastern States	214
TOTAL	8,884

Source: WO-830 Employment Branch. Does not include political appointees or executive service.

Name:	Training Catalog System
Location:	Denver Service Center
Hardware:	DPS-8/70
Software:	ASPEN
Telecommunications:	BLM Network

Name:	Oregon Training Tracking System - PC Based
Location:	Portland, Oregon
Hardware:	Wang-PC
Software:	Condor
Telecommunications:	N/A

<<< BLM Functional Requirement >>>

Contract Preparation and Control

Part 1: General Information

Associated Program: Procurement

User Organizations: Washington Office, DSC, State Offices, and some District Offices

Owner/Operator/Maintainer: Procurement Management Branch, Division of Administrative Services (WO-852)

Existing Automated System: Procurement Information Tracking System (PITS) under development in Oregon on Wang-PC using CONDOR DBMS; some State Offices have WP bidders lists; Procurement Tracking System on DSC's DPS-8; Level 6 Purchase Order Tracking in Montana

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Part 2: Description of Overall Program, Requirement, and Current Procedures

BLM procurements are separated into three areas: supplies, construction, and ADP/Telecommunications. Procurement authority is handled the same for supplies and construction. Depending on delegation by the state office, some district offices can authorize contracts under $10,000. State offices, except Oregon, can authorize contracts under $25,000. Washington Office and the Denver Service Center have unlimited contract authority. WO processes all procurements over $25,000 for WO and the Eastern States Office. DSC processes procurements over $25,000 for the rest of the state offices except Oregon. Due to the volume of contract activity in Oregon, particularly in forestry and construction, OSO has unlimited authority for sealed bid contracts in the OSO districts and resource areas. For negotiated contracts over $25,000, DSC retains authority over OSO.

Automation of procurement planning, tracking, and reporting is a major objective for the Administrative Services Division of BLM. In addition, they want to track small purchases authorized in the 75-80 bureau purchasing offices.

The Procurement Branch of the Washington Office Administrative Services Division is responsible for procurements within the Bureau east of the Mississippi over $25,000. They also provide policy on handling procurements to the rest of the bureau.

DSC has an automated list of procurements over $25,000 on the DPS 8. The State Offices could track their procurements using the Level 6's but seldom do. DSC has a list of all procurements which are overdue but does not keep it current.

The Oregon State Office Procurement Branch is a major buying office for BLM with 242 contracts, mostly for forest work, and 50 agreements per year. The major contracts are for reforestration, studies, and construction. Their workload of 90 contracts per person is twice the Grace Commission minimum of 45 contracts per person and three times the Department of Interior standard of 30 contracts per person. They work overtime to process the additional contracts.

Due to their volume, Oregon is also a major source of procurement software development activity. For example, Oregon manually tracks milestones for solicitations now but they are developing a Procurement Information Tracking System (PITS) on a WANG PC using Condor database software. Eventually, the District or Resource Areas will electronically enter data and transmit it to the State Office via DialComm, resulting in a monthly procurement plan at the State Office level. PITS will calculate the amount of the contract and provide a timeframe reference for the contract. Although Oregon is taking the lead, PITS will eventually be a BLM wide system.

Oregon is also considering the Federal Acquisition Regulation Automation System (FARA), a solicitation development package run on a Wang PC. Using FARA, the procurement officer can automatically include certain contract clauses in a contract.

They maintain a bidder's list on the WANG word processor. It lists past bidders by work type. With a bidders list, they can send solicitations directly to potential bidders. The Montana State Office keeps a bidders list on their Level 6 which consists of about 1 inch of computer printout and about 1,000 bidders. The list includes codes for bidders responses; when no response is received after 3 solicitations the bidder is purged from the list. With a bidders list, the number of responses for a given RFP are increased since potential bidders are less likely to overlook it and nonresponsive bidders are avoided.

All the States, including Orgeon, are required to report to the Federal Procurement Data Systems (FPDS) on all purchases over $10,000. This information is sent to the Washington office manually on a special form, SF279, including details on women, minority, and small business awards. All purchases under $10,000 are also reported on a special form, SF852, to the Washington Office.

The State Office processes purchase orders, contracts, and tracks all procurement from the District level up. A milestone schedule sheet is maintained manually at the State Office for all procurements. Close monitoring is necessary to ensure that the award is made before the end of the fiscal year. The State Office also needs to manually track women, minorities and small businesses in order to fill out a report to be sent in for the FPDS system.

Whether a District Office handles its own contracts or not depends upon the staffing at that location. The Oregon Lakeview District Office makes about $4,000 of purchases each month. The Resource Area does the paperwork for some of these. These are for services to build fences, water holes, blade the roads, etc. There are about 200 requisitions a month which require District Office staff signoff and transmission to the Denver Service Center.

The Lewistown District Office in Montana handles approximately 325 procurement actions a year, including purchase orders and requisitions. This also includes some competitive procurements.

For many states, such as Colorado, the only automated support is a solicitation mailing list (bidders list) on the word processor. They would like to develop a procurement and send it through all the approval processes in one step.

The state offices also need a way to consolidate and process phone and utility bills. CSO has 100 bills a month for their Resource Areas and District Offices with four different telephone companies. Every bill is transmitted individually to DSC. This takes the procurement officer two or three hours a day.

State office staff suggested that automatic transfer of orders to the General Printing Office and the Federal Register would be useful and save time. They must print these orders in the Federal Register. In Colorado, it takes about four hours a week to transmit this information.

One error in a procurement process can be costly. For example, an ambiguously stated contract could result in award to a vendor incapable of providing the supplies or services required by the government, resulting in lost money and lost time. Another example is an incident which occurred in Oregon. A spraying contract was delayed due to a contract mixup. The government lost approximately $100,000. Without the spraying, they could not plant seedlings. They lost all the site preparation costs and a year of forest development. BLM also loses FTE time in developing material to support BLM legal defense against claims. Well prepared solicitations reduce the risk of claims.

The Procurement Tracking System was developed by DSC in 1984 and is currently being used by some state offices such as Montana. In Montana, purchase orders are kept on their Level 6. A list of contracts is kept in their Wang word processor. Commonly used solicitation phrases are also kept on their Wang system.

An Annual Work Plan (AWP) procurement tracking system to plan ahead would be very helpful in speeding up RFP development. In Colorado, for example, it takes four months to get wage rates. If they knew the types of procurements being planned, they could start gathering pertinent information ahead of time.

The State Offices would like automated input to the Federal Procurement Data System. Tracking is done on all contracts manually to show women, minorities and small business as well as many other characteristics of a contract. This is done on standard form 279 for contracts and on form 852 for procurements under $10,000. The form 852 goes to the BLM administration and the form 279 is submitted in order to feed FPDS.

They would also like a tracking system for contract actions and automated requisitions instead of forms.

To support this function, BLM needs a system which will capture procurement information from one service for both SF 279 and SF 852 reporting to avoid duplicate data entry. A tracking system for procurements and purchase order agreements would be useful. Also, a streamlined telephone bill processing procedure would reduce the man-time investment in this activity.

Contract development and approval should be standardized to reduce the liklihood of error and ADP may be a good technique to accomplish this.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o **Operating schedule/deadlines:** For procurement development they are often working on short deadlines and often for seasonal services, such as spraying or contsruction, which lose value if they are delayed.

  279 Forms are submitted monthly for FPDS

  852 Forms are submitted monthly for BLM WO-852

- o **Security/privacy:** Some procurement information is very sensitive but does not require unusual security measures.

- o **Response time:** Overnight response is adequate. On-line is not required for most cases.

- o **Interfaces:** Currently no system interfaces, all operate independently.

- o **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Annual work plans indicating procurement needs
- Requisitions and procurement requests

Major programatic outputs:

- Request for Proposals
- Purchase Orders
- Reports on purchases to WO and FPDS (852 and 279 forms)

Use of existing system:

- **Number of users:** Approximately 95 users. There are 75-80 procurement offices with at least one procurement officer in each and several in the major procurement centers: WO, DSC, and OSO. Also, some state offices have data entry clerks for procurement information. Each of these would be a system user.

- **Amount of use:** Data entry is constant but peaks at the beginning of the year. Contract tracking would be used daily by most users. The bidders list usage would be based on the number of procurements required.

- **Distribution by office:** The heaviest workload is in DSC which processes several hundred major contracts each year. WO and OSO would also be heavy system users at around a hundred major contracts. The state offices and some district offices would also use the system but degree of use would vary widely. Some districts do not have any procurement authority and would not use the system. Resource areas are supplied by the districts.

Growth factors: The State Offices expect a gradual increase in processing contracts. In 1985 the State Offices were allowed to process contracts up to $25,000 and processing in some states increased dramatically. For example, in Montana the contracts quadrupled from 10 to 40 this year.

They also expect an increase in procurements under $10,000. Reform 88 will require more contracting to be done outside of BLM and will increase the number of contracts processed there.

Reform 88 and A-76 initiatives are increasing efforts to contract out more activities. This will continue to generate additional contracting workload while also generating pressures to handle this workload with fewer staff. Many district staff indicated they thought the State Offices may assume their duties in the near future. Similarly, the Eastern States procurement function may be combined with the Washington Office. The most probable technique to accomplish these consolidations will be increased ADP utilization.

Part 4: Existing Systems

Name: PITS

Location: Oregon State Office

Hardware: Wang-PC

Software: Condor DBMS

Telecommunications: N/A

Name: Procurement Tracking System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: ASPEN/2

Telecommunications: BLM Network

Name: Bidders Lists

Location: Various State Offices

Hardware: Wang OIS

Software: Wang List Processing

Telecommunications: N/A

Name: Purchase Order Tracking System

Location: Montana State Office

Hardware: Honeywell Level 6

Software: ASPEN/2

Telecommunications: BLM Network

<<< BLM Functional Requirement >>>

Fleet, Personal Property, Real Property, and Facility Inventory Management

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Part 1: General Information

Associated Program:	Property Management
User Organizations:	Washington Office, Denver Service Center, State Offices,and District Offices
Owner/Operator/Maintainer:	DSC; although some States and Districts maintain their own and feed DSC
Existing Automated System:	Automated Personal Property System (APPS); Motor Vehicle System; local APPS - Level 6; Director's Digest Bulletin System

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Part 2: Description of Overall Program, Requirement, and Current Procedures

In the Washington Office, Property management is responsible for overall management of both personal and real property within the bureau and the management of the bureau's motorpool. Management of these items consists of planning, acquisition, utilizations, and disposal. This office handles these functions for the Washington Office and provides policy and procedures concerned with these functions to the field offices.

In the Denver Service Center, the Branch of Property Management operates three main information systems: an Automated Motor Vehicle System, now under development and expected to be completed by the end of fiscal 1986; an Automated Personal Property System; and a manual real property system, including quarters and facilities.

The APPS contains approximately 110,000 entries for capitalized and non-capitalized personal property items owned by the Bureau of Land Management. The number of items included in the system has grown slowly in the past four years; the system contained a total of 94,000 entries in 1982. However, these figures may be somewhat misleading as 27,000 items were dropped from the system between 1982 and the present during a reclassification study. Of the total entries in the system, 40% represent capitalized items (items costing over $1,000) and 60% represent non-capitalized items (items costing between $300 and $1,000 or that cost less than $300 and are sensitive can be directed to personal use).

The Denver Service Center maintains and operates the Central Personal Property System. They make all data entry transactions, transfers, and deletions. Input forms are mailed in by field offices at the rate of approximately 3,000 transactions per month. APPS is updated every day with transactions received from the field. Three full-time data entry people enter new transactions.

Field offices can access the system to enter queries by serial number or property number, to print output reports, and also modify three of the values stored for each item: field name, location, and condition.

APPS runs on the DPS 8/70 at DSC and contains approximately 45 data elements per item. BLM regularly reviews the contents of the system to add or eliminate categories of property as appropriate. All personal property is inventoried on a staggered biennial basis. Capitalized items are inventoried one year, and non-capitalized items are inventoried the next year.

The Branch of Property Management is considering two major improvements to the existing personal property system: using bar code tags on each property item to simplify inventory; and developing an interface with BLM's Financial Management System to record depreciation charges.

The branch is now developing an Automated Motor Vehicle System. Development is anticipated to be complete by the end of fiscal 1986. BLM now owns approximately 2,000 to 2,300 vehicles and makes use of approximately 2,700 to 3,000 vehicles owned by GSA. BLM's vehicles include heavy equipment such as bulldozers and tractors. Although BLM's motor vehicles are stored in APPS, the new automated motor vehicle system will support fleet management, financial management, chargeback, utilization reporting, repair cost tracking, energy management, scheduled maintenance, and other functions. The new system will include an automatic reconciliation with the personal property system and could be used as the basis for a department-wide motor vehicle management system.

BLM does not currently operate an automated real property system for tracking items such as building and recreation sites. BLM needs a listing of the real property at each bureau location. Currently, one DSC employee tracks all real property at approximately 1700 locations, totaling $500 million in value. All real property statistics are computed by hand. The Branch of Property Management is attempting to install a Real Property Management application on a Wang personal computer. They are also considering merging the real property function with APPS.

The DSC Branch of Property Management identified two main areas where no systems are now in place or under development that may benefit from automated support. First, BLM maintains fire stores at the Alaska Fire Center (AFC) in Fairbanks (approximately $8 million of inventory) and Boise (approximately $5 million in inventory). Each fire store location has its own inventory management system, but the systems are incompatible, do not interface with FMS, and need improvement. Both the AFC and BIFC systems are designed for interagency issues, returns, repairs, billing, and credits as well as monthly reconciliation with the general ledger. They handle high dollar value and high turnover items.

Second, every BLM state office has its own fire tools and supplies warehoused (low dollar value and low turnover items); none of these stores are supported by computerized inventory management systems and most states have said that automated support would be beneficial. Most states have about 10 to 15 caches for fire stores with approximately 20 inventory line items per cache.

The DSC Branch of Property Management is also responsible for managing the quarters that BLM operates for seasonal and permanent personnel in some locations where housing is extremely scarce and difficult to find. There are about 350 slots for which BLM provides quarters, and one DSC employee is assigned to this function on a full-time basis.

BLM would like to obtain delegated leasing authority from GSA through the Department of Interior. BLM would use this authority to obtain 10 to 15-year term leases for its district and resource area offices, largely in areas where GSA does not maintain a significant local presence. To obtain such delegated authority, BLM would need to develop a building lease management system. The Forest Service now operates such a system on its own, and it might be possible for BLM to make use of the Forest Service's system.

The Branch of Property Management would also like to be able to do automated Fedstrip ordering. Fedstrip is a supply system operated by the General Services Administration's Federal Supply Service. Rather than ordering by way of paper requisitions, BLM would like to be able to log on to the Fedstrip system and enter its orders on-line. Other federal agencies, including the Bureau of Reclamation, now have this capability.

In the State Offices, the Administrative Services Branch performs Property Management, Space Management, Obligations, Travel, and Vehicle Management. They use the DSC DPS8 computer to track inventory, pull transaction reports, and monthly activity reports. They use APPS at DSC for the assigned property system yearly reports, and periodic changes in property assignments. They expressed interest in automating the monthly vehicle reports for each state. They are very time consuming.

Some States have their own APPS systems. The Colorado State Office uses a Personal Property System developed at the State Office on the Level 6 before DSC developed theirs. The CSO system is better in their opinion because it indicates who has physical possession of the property whereas the DSC system does not. To use both systems, they input the data twice, once to the Level 6 and once to the DPS 8 at DSC. The DSC system determines accountability for all BLM property. In the BLM system alone, there is a total of 7,552 items for Colorado; this includes all ADP hardware and equipment. They enter data daily and use it two or three times a month for queries. They can retrieve the data sorted by District, State Office, or for all of Colorado.

Colorado State also use the Automated Motor Vehicle System on the DPS 8 but it is not adequate. It shows no vehicle utilization. They feel they need a motor vehicle program which shows usage rate and costs to properly manage vehicles. They manage 394 vehicles in Colorado: 224 are GSA's and 170 are BLM's. DSC is developing a system for vehicle usage which should be ready by 1986.

The Level 6's are used by both the State Office and the District Office staff but their applications and data are kept independent. Neither organization can access the systems of the other group.

Some property management responsibilities are delegated by the states to the District Office. In the Grand Junction District Office, Colorado, they provide property management and data entry for their District and Resource Area offices. They are supported by the DSC version of APPS on the DPS-8. It has 1,000 property records including property location and name of owner. There are no edits on the front-end of the system. Half of the information was entered incorrectly, but no error report was produced to indicate that the information was wrong. Their property officer received a 1-day training course on APPS in July.

The District Offices find it hard to rely on the State and DSC ADP systems. The District Offices sometimes have difficulty transmitting data to the State, particularly when the communications network is changed. Printouts from the DSC or the State Office often arrive a week after the computer run. Headquarter staff indicate that printouts can be directed to any local office as requested to nullify mailing time but field staff are either unaware or untrained in how to do so. Complexities of logging into the system make it difficult to use. Frequent downtime makes it unreliable. It was down 50% for 2 weeks due to a problem caused by lightning. Every time the system goes down, some data is lost. Some Districts have lost a week of work at a time.

The Districts mentioned that the Warehouse System available from the Boise office of BLM would be useful to track supplies, but they are having trouble getting copies of it. BIFC considers the software proprietary. They require $10,000 to buy the proprietary rights, but WO853 does not feel the complexity of the system is needed in the State and District Offices.

To support this functional requirement, BLM needs to be able to identify the real property, personal property, facilities or structures, and vehicles owned or used by BLM. For each of these, BLM must be able to track the physical location, ownership, usage, and associated cost to BLM. These costs must be fed into FMS. Fire stores seem to be a high opportunity area for ADP because of the high aggregate inventory dollar value and its wide geographic distribution which makes tight control by manual systems difficult. However, a large investment would not be appropriate since the majority of the caches handle low dollar value and low turnover items. The system would have to be simple and inexpensive. Also, a consistent fire inventory system may provide for quicker identification of available stores to fight a fire and reduce overall inventory investments.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o Operating schedule/deadlines: Inquiries and changes to APPS are processed daily.

- **Security/privacy:** Normal business standards for security would be sufficient.
- **Response time:** Most property management activities are not time critical.
- **Interfaces:** Property management would like to develop an interface with the Financial Management System in BLM and an automated ordering mechanism for the GSA FEDSTRIP system.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Changes to Personal Property assignment or disposition
- Changes to real property
- Vehicle usage

Major programatic outputs:

- Reports on Personal Property Assignments and Status
- Reports on Vehicle Usage
- Supply orders to FEDSTRIP system to GSA

Use of existing system:

- **Number of users:** 75-80
- **Amount of use:** APPS and DDBS are used daily. MVS is used monthly.
- **Distribution by office:** Usage level varies by State Office. Some have delegated reporting responsibilties to the District Office level for Vehicle Reporting and Personal Property accounting.

  State and Districts both report on Personal Property.
- **Refer to Figure C4 for sizing information**

Growth factors: The pressure of Reform 88 initiatives will lead to more leveraging of personnel through more extensive use of equipment. This will generate more inventory record keeping and a higher inventory investment to track. Activity in thes area is likely to increase but fewer staff to perform it.

Fleet, Property, and Facility Management

	Vehicles and Equipment	Structures	Capitalized and Major Non-capitalized Property: Number	Capitalized and Major Non-capitalized Property: Value (in thousands)
Washington Office	1	2	1,394	1,016
Denver Service Center	19	9	4,265	14,665
Alaska	188	154	12,382	15,763
Arizona	238	68	5,419	6,813
BIFC	81	34	4,760	6,355
California	529	150	8,133	10,805
Colorado	394	88	7,785	8,905
Idaho	490	152	6,551	8,190
Montana	361	85	6,389	6,123
Nevada	452	138	7,043	9,337
New Mexico	322	70	6,328	7,744
Oregon	1,166	432	16,336	21,226
Utah	403	237	7,723	8,613
Wyoming	411	95	7,650	10,012
Eastern States	37	5	1,421	1,890
TOTAL	5,092	1,718	103,579	137,457

Source: WO 850, Property Management and Support Services Branch

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Part 4: Existing System

Name: Automated Personal Property System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: COBOL and ASPEN/2

Telecommunications: BLM Network

Name: Automated Motor Vehicle System

Location: Denver Service Center

Hardware: DPS-8/70

Software: COBOL and ASPEN/2

Telecommunications: BLM Network

Name: APPS Local

Location: Colorado State Office

Hardware: Honeywell Level 6

Software: ASPEN

Telecommunications: BLM Network

Name: Director's Digest Bulletin System

Location: Denver Service Center

Hardware: DPS-8/70

Software: N/A

Telecommunications: BLM Network

<<< BLM Functional Requirement >>>

Information Systems Management

Part 1: General Information

Associated Program:	Information Resources Management
User Organizations:	Washington Office, Denver Service Center, State Offices, some District Offices, some Resource Areas
Owner/Operator/Maintainer:	The Denver Service Center provides most operational support
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

Information Systems Management involves all activities associated with ADP hardware and software acquisition and operation. This includes software design, development, maintenance, or purchase as well as hardware purchase, installation, operation and maintenance. It also includes data security from a hardware and software perspective.

The biggest changes in BLM for Information Systems Management will come in institutionalizing BLM systems, systemizing and centralizing system development which is being done independently now, and developing software catalogs. For example, Colorado has a payroll front-end which could be used by the other state offices. BLM wants to encourage that kind of system development but under a formal umbrella.

One of BLM's major concerns is ADP security. The OIG criticized BLM for inadequate security in several areas. Some were in violation of the departmental manual. For example, the security officer currently reports to the ADP manager. This provides opportunity for the ADP Manager to influence the security officer. BLM does not know the extent of their vulnerability concerning ADP security but they know it is sufficient to be very concerned.

Information Systems Management responsibilities are delegated from the Washington Office level to as low as the District Office level in some State Offices. Systems are developed at the State and District level as well as the Denver Service Center. Washington Office does not develop systems.

The Information Systems Branch in Washington Office is responsible for all ADP activity except GIS. This includes policy and oversight for systems development, acquisition, and security. They receive all requests for equipment and services. They are responsible for the five-year systems plans, although they have had limited success in implementing the planning process. They are still teaching people how to develop the plans. Most requests still come from outside the planning process and the State Office configuration inventories are not particularly solid. Since information processing resources are scarce and valuable, the Washington Office feels it is important that ADP systems development be driven by cost benefit analysis. They are attempting to persuade the State Offices to use this approach in develooping their system plans, again with limited success.

Tracking plans against actual acquisitions is difficult. Equipment is sometimes acquired in a different FY than the one for which it was approved. For example, a field office will get technical approval to buy the equipment but insufficient budget to run the procurement. They may get funding the next FY to buy the equipment or they may decide to cancel. When a request to buy equipment is processed, the field office may claim it was already approved, whether it was or not. This is difficult for WO to dispute or verify.

In the Information Systems area, they need more emphasis on ADP security partly because of the OIG criticism of BLM's security. This would include risk analysis, physical security, personnel security, and training in security techniques.

The Denver Service Center conducts most operational systems activities and the State Offices conduct most ADP acquisitions. Distribution of ADP personnel and equipment resources is not even. Several State Offices such as New Mexico, Eastern states, and Idaho have no analysts or programmers. BLM is trying to institute more Life Cycle Management but it is difficult when the planning process is not firmly established yet.

The WO Information Systems Branch has essentially no automated support, except word processing. The Information Services Branch at Eastern States provides operational ADP support for the Washington Office. Washington Office feels they need an inventory of hardware, and the capability to track planned and unplanned requests for systems resources, including eventual resolution. They need to track internal control reviews and follow-up on recommendations, particularly concerning security given the OIG report.

With regard to State Office systems plans, WO essentially aggregates them to form the BLM-wide plan. This is not straight-forward since the plans from State to State vary substantially in quality and format. They also respond to departmental inquiries, usually with a specific time deadline. Most of their requests are not time dependent.

The Information Systems groups in the State Offices see a developing need for a user support function. They anticipate a large increase in distributive processing capability and end user computing. Many of the systems at DSC could run closer to the field level.

Until recently, the Level 6 computers in the State Offices served as primarily data concentrators. Both the Level 6's and ADP in general is relatively new for many states. In Montana, for example, the Level 6 was installed in 1979 and the MSO Information Services Branch was formed in 1981. It was not fully staffed until two years later.

From the State Office perspective, the two primary objectives of the ADP function are:

(1) to supply equipment to people who know how to use it and

(2) to provide training to District Office and Resource Area staff to supplement the Denver Service Center's Training Program.

Currently many States run ORCA, the Oregon Case Access software, and SIMO, the Simultaneous Oil and Gas leasing software on the Level 6's as well as locally developed programs, generally simple tracking systems.

Most microcomputer capability is provided by Wang PC equipment.

Some of the State Office managers see a rising interest in sharing data with outside organizations such as the other land agencies and the states. Combining this demand with the demand associated with more distributed processing, they expect a big increase in telecommunications workload.

State Office staff expressed concern that too much time, effort, and money are going into development of 'supersystems' like ALMRS. As a result, no resources are available to make more modest ADP investments with more immediate payback such as graphics equipment or simple tracking software. In addition, these projects are so grand in scale that their risk of failure is quite high. They would like less emphasis on big systems.

Information Systems Management at the District Offfice level exists in some District Offices. This takes the form of one systems specialist and sometimes data entry personnel if the state does not do data entry for them. The systems specialist answers all questions concerning equipment, software, and telecommunications operation and maintenence in the district.

A growing challenge for the Information Systems function is the development of office automation systems and capabilities that are quickly approaching data processing. The distinction between OA and ADP is already blurring. Under the current Wang office automation contract, BLM is acquiring Wang PCs which operate both as OA terminals and as microcomputers.

The Information Systems function will be required to interface with this OA capability while controlling growth to a manageable level.

Another major change anticipated by Washington Office is the requirement to "charge back" the cost of operating DSC. Currently, 45-49% of the ADP systems are funded by the Division of Information Resources Management. This accounting change required by DOI new departmental policy may result in an acceleration of decentralized ADP within BLM. This changes the nature of ADP support requirements.

To support Information Resources Management, BLM needs a system to help coordinate ADP planning by the State Office, monitor activities against the plans, and match system acquisition to needs. An inventory of current equipment and its usage would also help planning. BLM will need techniques to help standardize systems development activity and end user software packages, communicate with end users, and coordinate the "lead state" concept of system development.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The operating deadlines of the Information Systems Management function are driven by the deadlines for the specific systems being supported. The Denver Service Center is most effected by these deadlines since they have the majority of the operational responsibilities.

  The administrative deadlines are primarily annual, such as the State Office Systems Plan.

- **Security/privacy:** Since Information Systems Management is responsible for security from an ADP hardware, software, and data perspective; and BLM will be increasing their emphasis in this area; their security needs will increase. However, other than specific files such as the password/user file, normal business standards for security will be sufficient.

- **Response time:** Since operational support may involve time-critical applications, 3 to 5 second response time for operational support personnel is prudent. For information management administration, quick response time will not be critical.

- **Interfaces:** Two important interfaces must be considered: the interface between the user community's management and the Information Systems Management planning staff, and the interface between system users and system support staff. Effective communication between program management staff and the ADP planning staffs is important to assure that the correct systems are being built. Communication between the support staff and the end-users is equally important to keep users informed of: changes to the system, proper procedures to operate the system effectively, and known bugs or deficiencies in the system. The users can also provide guidance to the support team on the relative priority of system changes or fixes.

- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- State Office program and system plans
- Changes or fixes requested by users
- Requests for ADP equipment and services

Major programmatic outputs:

- BLM Five-Year Systems Plan
- System corrections and changes
- Systems policy and guidance
- Approval or rejection of ADP requests

Use of existing system:

Not applicable

Growth factors: Information Systems Management in BLM is likely to grow although the exact rate of growth will be difficult to predict. ADP systems within BLM are likely to expand and the management of those systems will expand also. Here are some of the factors which indicate system growth in BLM.

There is a new departmental policy concerning cost accounting and recovery. Currently, the DIRM funds 45 to 49% of the systems in operation. DOI feels that these systems should be self-supporting. The Denver Service Center has their own cost accounting in place now. By 1987, they will try to institute cost recovery. These new procedures will require new financial procedures, some of them mechanized.

They anticipate departmental initiatives in four areas: payroll, procurement, property management, and financial management systems. For each area, one bureau will be selected as a lead and provide systems services to the other bureaus within DOI. BLM is a candidate for three of the four areas. Serving other bureaus will complicate the system management function.

BLM would like to take the lead with Geographic Information Systems and micrographics for the other bureaus. Another opportunity would be a department-wide ALMRS kind of system, although that is in the distant future. Again, the information systems management team must be adequately prepared for these additional demands.

They also anticipate a move within DOI toward more general purpose computer centers and less bureau-specific centers. This would cause the information management function to emerge as more of an end-user support role.

Part 4: Existing System

Not applicable

<<< BLM Functional Requirement >>>

Telecommunications and Technology Management

Part 1: General Information

Associated Program:	Information Resources Management, Fire and Aviation Management
User Organizations:	Washington Office, Denver Service Center, Boise Interagency Fire Center, State Offices, and District Offices
Owner/Operator/Maintainer:	DSC has national network responsibility; State Offices have state network responsibility; WO maintains the Frequency Management System for their own use.
Existing Automated System:	Frequency Management System

Part 2: Description of Overall Program, Requirement, and Current Procedures

The management of telecommunications and technology within BLM has become more complex due to the AT & T divestiture. BLM deals with over 125 phone companies. Each has their own tariffs, rate structures, and cross-boundary problems. For example, in Alaska where the boundaries of two phone companies touched BLM was fighting a fire. The phone companies had a dispute and one company refused to deal with the other. They pulled all their equipment and essentially cut off the fire fighting teams from the BLM operational headquarters. Although service was promptly restored, it highlights the precarious position of BLM with regards to communications.

The Washington Office Telecommunications Branch is responsible for providing policy and oversight for all telecommunications systems. The Washington Office is responsible for the Boise Interagency Fire Center as well. They are equivalent to a state Office from the Washington Office viewpoint. The nationwide network responsibility is in the Denver Service Center. This responsibility ends in the state office computer room. Each state office is responsible for their state's network. Each district office has an officer responsible for telecommunication.

BLM maintains its own radio system. They are also beginning to buy telephone systems rather than leasing. In addition to these networks, WO Telecommunications is also responsible for presenting BLM's data communications and electronic distance measuring requirements to the department to receive DOI licensing.

The Fire and Aviation Management Division has a technology coordinator who also is involved in technology management but with a different focus. In addition to telecommunications, the technology coordinator investigates any technology which could be used to fight fire or coordinate fire teams.

WO maintains a Frequency Management System on a Wang PC. They will also be receiving responsibility for the electronic mail coordination contract with DataComm. This involves adding and removing electronic mail boxes. There are three task forces for telecommunications within BLM. One is a maintenance task force designed to determine what BLM will need to do in order to pick up responsibilities from the Federal Communication Commission which is backing out of their responsibilities to coordinate telecommunications usage of public mountaintops. A second is the personnel recruitment task force to study how to attract more qualified telecommunications people. The third task force will study the use of repeaters on many different frequencies simultaneously to avoid tying up the ground network and getting more usage out of the ground network.

Access to public mountain tops is a big issue. There are three major law suits pending in the telecommunications area, all involving cases of interference or permanent denial due to probably interference.

The Telecommunications staff in the Denver Service Center collects Telecommunication Specific Records (TSRs) from each state. These records are not automated but there are plans to do so in the near future and keep it on a Wang PC. It is a detail record of that state's system. WO would like to reduce the load on the state offices for reporting. Often the Telecommunications Manager is not a full-time manager, but has other responsibilities as well, often with regard to fire teams.

The state offices currently use statewide communication star networks. GIS will be just another port on the network. The network is primarily landlines now.

There are currently no traffic problems as far as level of traffic. However, port contention is a problem. The States primarily support interactive terminals. They anticipate that distributing processing to the field level may generate downloading of data which could cause some load problems, particularly if the downloading occurs simultaneously. However, the State Office staff felt the communications lines could be upgraded to handle it without alot of trouble.

The state office staff are unaware of any technology required by the field that is not readily available in the marketplace. Their current facsimile capability, although limited, is better than E-Mail for transmission of large documents and signed copies. According to the technical BLM staff, there is a lack of understanding in the field concerning how to use E-Mail, and there is some misuse of the E-Mail systems. The state office staff indicated an interest in more responsiveness by DSC to user's needs, training availability, and acquisition of new technologies, such as E-Mail.

The state and district offices design the communications network for a particular state. The Resource Areas communicate with the State Office through dial-up voice grade lines or through switched dedicated lines routed through a Mux at the district. Most communications to DSC are routed through the State Office but not all go through the Level 6's. Some are routed through switching equipment such as the GANDALPH used by Montana.

Due to their remote locations, BLM has unusual communication problems. They are cancelling the Federal Telephone System to Grand Junction District Office in Colorado for example, because the cost of maintaining it is too high. Also, since they use primarily land lines, providing good communication capability to a remote site is expensive.

A CODEX, which is a leg from the DSC Star Network is connected to the state offices. It runs at 4800 baud and can be increased up to 19.2. This currently supports Data General machines operated in Utah and Idaho. The system was upgraded recently with Utah funding. Idaho operates with an 8 channel Paradigm MUX; Utah functions with the CODEX.

When necessary, communications between State Offices is possible. For example, New Mexico is having legal problems in their coal program. There is a multi-million dollar class action suit which may require the Colorado State Office's Data General to resolve. They may load information on the Colorado system, going through DSC and using the CODEX.

The technical staff have found that GIS requires a lot of ports and creates contention problems with the GANDALF switches. The queue to the computer appears to be the bottleneck. They said they were I/O bound, that the disk was fragmented by the number of ports. In Colorado, they are installing a Winchester 14 megabyte drive for the Level 6 which they are going to use to fix that problem. They have up to 57 ports on the Level 6 currently.

Some Resource Areas still do not have access to the ADP system. For example, the Colorado State Office hopes to get data to the Craig Resource Area by fall; they need a Bell cable to handle data, phone and radio information to Craig.

The field staff is continually attempting to improve communication access and quality. For example the Colorado State Office plans to get a T1 system to tie them with a microwave hub in Jefferson County by 1987. A short microwave was not feasible. They currently process telecommunications with Dialcom, as most of BLM does, but are trying to get a telecommunications product called Kermit which they feel will improve performance. Also, they believe the Department of Commerce is designing microwave sites which BLM could use.

This constant activity and the diversity of the systems BLM field personnel use creates problems interfacing with other systems. No single interface exists. For example, the Grand Junction District Office in Colorado uses DialComm, Datacall, and interfaces with the Bureau of Reclamation's MS-1 and the USGS AFFIRMS system.

To support telecommunications and technology coordination, BLM must be able to identify current equipment, measure its capacity, and measure its current utilization. They must be collect a data history to project growth based on past history and have the tools necessary to analyze the historical data. Also, particularly in telecommunications, they must develop a mechanism to identify and evaluate new technology which may be applicable to fire or BLM-wide telecommunications. One approach may be to select a State Office to pilot the technology.

With the anticipated growth in distributed processing, reliable data communications will become more important.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The telecommunications network seems to evolve with no unexpected influx of requirements. Since many of the telecommunications staff in the field are not full-time, the work is accomplished subject to interruption by regular duties. The Telecommunication Specification Records are updated by DSC as changes are reported by the field.

- **Security/privacy:** Normal business standards for security would be sufficient.

- **Response time:** In interrogating network status or other network support activity in DSC, response time of 3 seconds or less will be important. For most network management acticities, response time will not be critical.

- **Interfaces:** Coordination between DSC, WO, state, and district personnel is very important but telecommunications information feeds no other systems nor relies on other systems.

  The network itself must be compatible with other outside communication services to allow communication with other bureau's systems and other outside ADP services.

- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Telecommunications Specifications Record updates
- Requests for improved telecommunications services
- Representatives for 125 different telephone companies
- Telecommunications plans of other land agencies, such as the forest service.
- Fire team requirements for temporary communications

Major programatic outputs:

- Telecommunications Specification Records
- Upgraded telecommunication services
- Coordination of remote communication requirments with the telephone companies
- Temporary communication networks to support fire fighting as close to the front line as possible.

Use of existing system:

- **Number of users:**

  Only Washington Office uses the Frequency Management System

- **Amount of use:**

  As new frequencies are used, WO updates their list

- **Distribution by office:** Most network management activity occurs in the DSC with significant network planning at the state and district levels. Washington Office provides policy and oversight.
- **Sizing information:** Each State has a star network connected to DSC with Districts as nodes. Each District and some Resource Areas have its own radio network. There is sufficient port demand to require multiplexing between every State and District and between some Districts and Resource Areas.

Growth factors: The field offices are constantly acquiring new equipment. In Montana, they went from two terminals to fifty in one year. All of this equipment is being acquired with the idea of communicating in some way with either the states, DSC, or computer services outside of BLM. With Reform 88, the pressure to substitute additional staff with ADP equipment is strong.

Also, the trend in BLM is definitely toward more distributed processing. This implies more extensive communications if not necessarily more communication volume. New technologies are opening more options to the user community and changing the costs dramatically. All this points to increased communication activity in BLM or at the very least a change in the way they communicate.

Part 4: Existing System

Name:	Frequency Management System
Location:	Washington Office
Hardware:	Wang PC
Software:	N/A
Telecommunications:	N/A

<<< BLM Functional Requirement >>>

Records Management

Part 1: General Information

Associated Program:	Information Resources Management, Directives Management
User Organizations:	Washington Office, Denver Service Center, State Offices, District Offices
Owner/Operator/Maintainer:	Branch of Records Management, WO-871
Existing Automated System:	Some correspondence tracking systems in the State Offices, such as Montana, on the DPS-8 in DSC; Library Reference System; On-line Computer Library Center; Directives and Memorandums System; Controlled Mail System

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Part 2: Description of Overall Program, Requirement, and Current Procedures

BLM currently holds over 145,000 cubic feet of records, many of which are legal records accessible to the public. Each record type has a schedule describing how long it should be held, how it should be stored, and how to dispose of it once the holding period has expired. BLM's mission is very records-oriented.

The Records Management function is positioned differently in each State Office depending on the programs emphasized in that office. For example, in Montana there are two records management organizations: Records Management Section within the Administation Division and a Records Branch within the Minerals Division. In Oregon, there are also two records management organizations but they are placed in the Operations and Administrative Divisions. This does not imply duplication. The division of responsibility is normally along administrative/operational lines. The number of organizations maintaining records and dealing with records only emphasizes the importance of record keeping to the mission of BLM.

In the Washington Office, there are two organizations, the Directives Management Branch of the Administrative Services Division and the Records Management Branch within the Division of Information Resources Management.

The Directives Management Branch is responsible for maintaining the BLM manual and administering the Word Processing equipment contract, currently held by WANG.

The BLM Directives manual is actually a set of manuals occupying a complete bookshelf approximately 4 to 5 feet tall. Although the workload is continuous, it is not expected to grow or diminish in the near future. The WP contract has required more effort than expected due to the demand in BLM for WP support and the availability of WANG-PC's under the WANG contract. Directives Management provides limited technical support for the word processing equipment. At the time the contract was awarded, it was unclear how WP equipment should be classified or what the level of interest would be. It was considered more similar to electric typewriters than ADP so Directives Management received support responsibility rather than DSC.

The Records Management Branch is responsible for providing policy and guidance for paperwork management, records management, and correspondence preparation. They are also responsible for the Privacy Act and for the Freedom of Information Act with regard to the BLM. The actual implementation of the policy and day-to-day operations are conducted by the Denver Service Center's Record Systems Division. The Washington Office organization establishes policy and procedures. In general, records are stored decentrally at the field office level except for the Eastern States Office which has the Secretary of Interior's copy of Land Status records.

Paperwork management in general involves the Information Collection Program. BLM is required by law to determine if the information they collect from the public is being collected by other areas of the department as well. They are responsible for both internal reports and reports to DOI concerning compliance with the Information Collection Program. In records management, they are responsible for controlling the access of information collected by BLM. This includes limiting access under the Privacy Act which covers both manual and automated records and also assuring access to records through the Freedom of Information Act. FOIA requests come through controlled correspondence via Congressional Affairs. They are given a ten day time frame in which to respond.

Correspondence preparation includes how to appropriately correspond to controlled correspondence. This includes basic formats, the number of copies, filing standards, signing protocol, etc.

BLM is responsible for the operational onshore mineral records from the Minerals Management Service. At one point, the responsibilities for keeping records on leasing activity were split between MMS and BLM based on pre-leasing activity and post-leasing activity. Now BLM is responsible for all the records. This involves a lot of proprietary and highly confidential information. Therefore, data security is imperative.

Records Management is also responsible for controlling the disposition of records. Everything must be scheduled concerning how long it should be kept, and will it be kept in the National Archives once it is no longer active or destroyed. BLM generates a lot of permanent records. They currently have a good schedule but it is not automated. They have a separate schedule for automated records. They produce a Records Holding report on the cubic feet of records they have retained. They also conduct information service reviews for approximately four state offices per year. These reviews are more technical than the OPE reviews.

They will attempt to standardize their record keeping more through ALMRS but this will be a problem because the East has considerably different records than the West.

In the micrographics area, they provide policy and guidance. The actual microfilming is done in the Denver Service Center in the West. The East has not been included in this program. This is partly due to the difference between their records and those in the West. Mining claim recordation is a particularly good application for microfilm because of the volumes of paper generated by the mining claims. Currently, the State Offices should be keeping the originals on microfilm, but the field offices are not complying uniformly and many of them continue to keep paper. There is a broad difference in the degree of application. For example, Wyoming is microfilming heavily, while the Colorado state office is not microfilming at all.

Records Management is also responsible for library management, bureau-wide, at the Denver Service Center. They use an automatic literature search through a public service called WESTFORNET, a Forest Service program.

There is an outstanding issue concerning the amount of effort BLM should continue to invest in the Public Land Statistics. These statistics are often quoted by outside organizations but not used extensively by BLM. Actual collection is done in the Denver Service Center. The Records Management Branch is responsible for collecting PLS information in the Washington Office.

In Montana and many other States, the Records Management Section of the Administration Division is essentially a library function. The mail and file clerk capabilities are also within this section. The Montana State Office is the only BLM office with a professional library. They have a reference and a loan library, bibliographies, collections on resources, a legal library and a minerals collection. These three collections are on separate floors within the State Office building.

The function of the library is to provide information to the State, District and Resource Area levels, through inter-library loans for the most part although there is a limited collection at the State Office. The function requires a lot of contact with other libraries both in the State and out of state.

The library system has three ADP support systems. One is called LRS, the Library Reference System which was designed by DSC; another is the OCLC, the On-line Library Computer Center program designed by Ohio and available nationwide for a $6,000 per year lease cost; and the third is the Controlled Mail System which is an ASPEN application on DSC.

The LRS is about two years old, very difficult to use, has lengthy commands, and requires line by line data entry. It is used infrequently. It was designed to be similar to the OCLC and cheaper but has not been successful.

OCLC can access 3800 libraries including the Library of Congress and universities. It is nationwide library link. The system provides automatic cataloging; when a title is loaded into the system, the system will automatically issue a card and assign key words for retrieval.

The system is used daily by the library. A search for 5 books costs $1.00. The system was obtained in 1977 when a Environmental Impact Statement was being developed and required a large data gathering. It has been supported by the State Office since then. No other State Office mentioned access to this system.

Due to a lack of funds, the library is becoming more specialized with a more narrow collection. However information requests from the District and Resource Area offices have been increasing. To save money, they will try to consolidate the three libraries into one room. This means storing some information which should probably remain available but there is no alternative.

The Districts may start developing libraries of their own. Right now Lewistown is starting to input information into the LRS. However, until these libraries are fully established, District Offices such as Miles City will continue to use the State Office library or perhaps access information at the local university libraries.

One library technician operate three directives management systems: the Library System, the Controlled Mail System, and the Directives and Information Memorandums. Since 1983, Montana has been entering data into an ASPEN system in DSC to track directive information such as title, issue, date, and author. They have 1300 memos on the system now and are adding 30 to 40 new directives a month. They also have a list of forms on the system. There are 115 forms now with about four changes made each month. They want to catalog the records they are keeping, such as the Memos of Understanding and also list of the general correspondence file names by numeric code and title. They have 300 separate files, each with three fiscal years of correspondence.

Montana was also the only State Office with a full-time ALMRS coordinator as part of the ADP systems staff. As electronic records become more prevalent, applying sound records management principles to electronic records will become more important. Technology will allow more control of records without hindering their availability to authorized use. The earlier these standards and controls are developed in the system development process the less correction is required later. The ALMRS coordinator as part of the systems staff is concerned with maintaining the consistency and integrity of the ALMRS data and resolving conflicts as early in the process as possible.

In the Colorado State office, the Records Management Function maintains BLM records, including the library; provides security of records; consolidates orders on publications; and samples the mail which they report in three types of reports each year. The mail sampling consists of about 150,000 pieces a year reported, weighed, and costs accounted for. Both the mail sampling and record security are reported to the Washington office. The consolidation of orders for publications come from the District and the Resource Areas and these are for Federal regulations and other publications. They are also required to report the number of feet of records that he is holding to GSA.

Colorado staff feel they need an index of their library holdings. There are about 6,000 manuals currently waiting to be indexed. They feel they need a key-word search index of the memos sent between the Districts, the State Office, and the Washington office. The Washington office sends about 1,000 memos a year to the State Office and about 7,000 a year to the District Office. In addition to these, there are also Memorandums of Understanding (200) and Manual Supplements (20 to 25 a year) which should also be indexed.

They also need the ability to transmit documents and circulate memos for changes and for sign offs.

Record management functions are also performed as part of the programmatic responsibilities of some state office staff. Which section of the organization depends on the program emphasized in that state. Further discussion of these activities can be found in the functional descriptions for those programs since the thrust of their actions is program related more than Records Management related.

To support the records management function, BLM's information systems must provide timely identification of pertinent records, timely access to legal records by the public, and adequate protection to the legal records to prevent deterioration. They must also support timely identification of records which can be destroyed or archived to improve space utilization.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Records Management must repond within ten days to any Freedom of Information Act (FOIA) request.

  Records Management reports the cubic feet of records kept by BLM to GSA annually.

  Report to DOI annually on the Information Collection Program in BLM. This report illustrates that BLM is only collecting the information it needs from the public which is not already being collected by DOI.

  For reference materials and directives, the latest information must be available within a reasonable amount of time to be useful. The timeframe depends on the time critical nature of the material. For example, a directive may be effective immediately whereas more academic references are less sensitive to time.

- **Security/privacy:** Records Management is very concerned with the procedures to guarantee the security of information but the information handled by this function itself has no special security needs. Normal business standards for security would be sufficient.

- **Response time:** Most records management activities, other than FOIA requests, would not be time sensitive. Overnight update would be adequate. Online retrieval may be desirable for some materials but not required.

- **Interfaces:** The library functions require the capability to access outside library retrieval services such as the OCLC system mentioned above.

- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Directives, correspondence, and administrative records
- Reference materials
- Freedom of Information Act requests
- Internal requests for information

Major programatic outputs:

- Policy and guidance on correspondence, record retention, record disposition, and reference materials
- Responses to FOIA requests
- Reference materials in reponse to information requests
- Report to GSA on cubic feet of records maintained
- Report to DOI on their Information Collection Activities
- Controlled access to BLM collected information on individuals or entities in compliance with the Privacy Act

Use of existing system:

- **Number of users:** For OCLC, less than 5.

- **Amount of use:** The OCLC system is used daily. The memos and directives is used daily.

- **Distribution by office:** For OCLC, the Montana State office is the only user.

  For memos and directives, all state and district offices can access the DSC system as well as the systems many of the states have established on their Level 6's.

- **Refer to Figure C-5 for sizing information**

Growth factors: The data collection associated with the two large systems development activities under way, GIS and ALMRS, will require effective records management techniques to avoid being swamped by the sheer volume of information. This indicates increased emphasis on the records management function concerning electronic records and also hardcopy generated by these systems.

The library aspect of the records management function appears to be de-emphasized. Unless there is a groundswell of interest, it is unlikely to expand.

Part 4: Existing System

Name:	Library Reference System (LRS)
Location:	Denver Service Center
Hardware:	Honeywell DPS-8/70
Software:	COBOL
Telecommunications:	BLM Network

Name:	On-line Computer Library Center (OCLC)
Location:	Outside Service - Ohio University
Hardware:	Unavailable
Software:	Unavailable
Telecommunications:	BLM Network

Name:	Correspondence Tracking System
Location:	Denver Service Center
Hardware:	DPS-8/70
Software:	ASPEN
Telecommunications:	BLM Network

Figure C-5
Records Management
Sizing Information

	Paper (in Cubic Feet)	Reference Material (in Cubic Feet)	Magnetic Tapes	Number of Cases Microfilmed in FY 85
Washington Office*	1,175	5,458	0	---
Alaska	12,234	711	3,396	0
Arizona	5,790	2,246	0	0
California	10,116	6,336	1,003	4
Colorado	10,067	4,683	0	0
Eastern States Office	10,826	4,233	25	0
Idaho	5,068	4,196	151	0
Montana	10,546	2,503	300	446
Nevada	6,135	4,578	90	145,870
New Mexico	13,707	2,904	132	34
Oregon	11,825	4,575	230	4,420
Utah	6,520	3,852	13	10,669
Wyoming	12,594	4,282	300	209,159
BIFC	350	548	3	0
Denver Service Center	12,930	4,215	16,100	0
TOTAL	129,883	55,320	77,063	370,602

Source: WO-870, Records Management Branch - Annual Summary of Records Holding Information

* Washington Office data is incomplete.

Name: Controlled Mail System

Location: Denver Service Center

Hardware: DPS-8/70

Software: ASPEN

Telecommunications: BLM Network

Name: Directives and Memorandums System

Location: Denver Service Center

Hardware: DPS-8/70

Software: ASPEN

Telecommunications: BLM Network

<<< BLM Functional Requirement >>>

Organizational Analysis and Reform 88 Reporting

Part 1: General Information

Associated Program:	Management Research
User Organizations:	Washington Office Management Team, Bureau Management Team, State Office Management, and Management Research
Owner/Operator/Maintainer:	Division of Management Research
Existing Automated System:	No integrated system. Use parts of the Financial Management System, Pay/Pers, Budget System, and MBO to compile analysis.

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Division of Management Research is responsible for organizational and functional assignments of responsibility and management and policy studies. There are no counterpart organizations in the field. All A-76 and Reform 88 efforts are focused through them. Approximately 70% to 80% of their workload comes directly from the Bureau Director or Associate Director in the form of special projects. Most of these studies involve organizational or functional analysis. For example, the merger with the Minerals Management Service was initiated in the Division of Management Research. They are working on the Land Interchange Agreement with the Forest Service now.

Management Research serves as the executive secretariat for the two top management teams in BLM: the Headquarters Management Team and the Bureau Management Team. The Headquarters Management Team consists of the Director, the Associate Director, and the three Deputy Directors. The Bureau Management Team consists of the Headquarters Management Team and the thirteen State Office Directors.

The other 20% to 30% of their workload consists of participation in evaluation studies where they have an interest or forming evaluation teams to study part of a State Office organization, often at the request of the State

Office Director. There are ten staff in the division. If additional staff are needed, they request support from the Division of Program Evaluation or from the State Office staff.

They are responsible for a quarterly Reform 88 Tracking Report. At the beginning of the fiscal year, they set position and dollar targets for the State Offices. During the year, they track the progress of each State towards those goals and report quarterly.

Management Research uses the PAY/PERS system to get detailed information on the organization they are studying. The type of information will vary based on the objectives of the study. For example, a Reform 88 study would be concerned with the ratio of personnel versus the activities performed but a study of the 'Grade Bulge' problem would analyze an organization to determine if it has too many GS 11 through GS 15 staff for its size.

Before the FMS system was redesigned, it provided financial detail to Management Research for workload analysis. Since the redesign eliminated about 70% of the subcodes, it is more difficult to track individual programs with FMS as they did in the past. They need a system which provides project control and management information beyond the budget data. FMS cannot provide that detail now.

The MBO system is supposed to support them but in reality it is not very useful. It is more of a management reporting system than a true Management By Objectives system. It tracks progress against objectives specified by the Secretary or the State Offices. Each objective has tasks to complete as steps to its completion. Management Research feels it would be more useful if it was tied to the Budget and FMS systems.

To support the organizational analysis function, the BLM information systems must be able to provide ad hoc query capability on BLM position and personnel composition; actual performance of programs versus budget; and local manipulation of this data by an analyst, using spreadsheet and statistical packages. Graphic illustrations for the resulting figures would also be required for management reports and briefings.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Management Research produces the Reform 88 Quarterly Tracking Report. Their schedules and deadlines are dictated by the specific project.

- **Security/privacy:** Both the data being used and the study results may be sensitive. The system should provide security/privacy consistent with that required by personnel/payroll systems.

- **Response time:** Depends on the nature of the project. For extended organizational analysis, overnight turnaround would be adequate. For high priority responses, Management Research would need immediate response but would not necessarily need to be on-line themselves as long as they had access to someone who was on-line.
- **Interfaces:** For organizational analysis, Management Research would need ad hoc query access to payroll/personnel, budget, financial, project management, and planning information on the organization involved.
- **Reliability:** Reliability comensurate with current business standards would be sufficient.

Major programmatic inputs:

- Organizational charts
- Personnel composition of organizations
- Organizational missions and functions
- Budgetary and financial background
- Workload statistics

Major programatic outputs:

- Reform 88 Quarterly Tracking Report
- Organizational changes
- Reform 88 targets
- Management recommendations
- Interim study reports, such as Land Interchange Reports

Use of existing system:

- **Number of users:** 10
- **Amount of use:** Staff uses systems as needed. Demand is very irregular and project oriented.
- **Distribution by office:** All activity is from the Washington Office, although the staff may be on assignment in field offices to gather data.

Growth factors: Continued budgetary pressures will force BLM to become more efficient. Management Research will be required to develop the BLM strategy for doing so. This implies an increased workload.

Although the workload will increase, the size of the Management Research staff will not. They must make better use of ADP tools and resources to keep up.

Part 4: Existing System

Name: PAY/PERS

Location: Bureau of Reclamation, through Denver Service Center

Hardware: Honeywell DPS-8/70

Software: COBOL

Telecommunications: BLM Network

Name: Financial Management System

Location: Denver Service Center

Hardware: DPS-8/70

Software: COBOL

Telecommunications: BLM Network

Name: Management By Objectives System

Location: Denver Service Center

Hardware: DPS-8/70

Software: ASPEN/2

Telecommunications: BLM Network

Name: Workload By Objectives Matrix

Location: Denver Service Center

Hardware: DPS-8/70

Software: WBL Matrix

Telecommunications: BLM Network

Name: Lotus 1-2-3

Location: Washington Office - Minerals

Hardware: Wang-PC

Software: Lotus 1-2-3

Telecommunications: N/A

<<< BLM Functional Requirement >>>

Program Evaluation

Part 1: General Information

Associated Program:	Program Evaluation
User Organizations:	Washington Office, State Offices, Denver Service Center
Owner/Operator/Maintainer:	Division of Program Evaluation
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Division of Program Evaluation is responsible for setting the standards and procedures by which the State Offices conduct evaluations of their programs. They are also responsible for bureau-wide evaluations and for training State Office personnel in evaluation techniques.

The Division of Program Evaluation has four major functions: Reviews and Evaluations, Training, GAO/OIG Coordination, and Special Studies. Each of these functional areas will be discussed individually.

1. Reviews and Evaluations.

   There are four kinds of evaluations conducted within BLM: Program Evaluation (both bureau-wide and state-wide), General Management Evaluations, Special Evaluations, and Assistance and Technical Procedure Reviews. The Division of Program Evaluation conducts bureau-wide program evaluations, General Management evaluations, and Special Evaluations.

   Although they do not get directly involved with the Assistance and Technical Procedure Reviews or the State Office program evaluations, they do provide direction and assistance.

2. Training.

   The Division of Program Evaluation produces a catalog of training courses on evaluation techniques and procedures. They average approximately two to three formal training sessions per year.

When they conduct training sessions, they normally go to the State Office for two or three days. In addition to the catalog, they also develop the training materials that they use.

3. GAO/OIG Coordination.

At any particular time, there are 50 or 60 ongoing GAO jobs affecting BLM. It is the Program Evaluation staff's responsibility to provide clearances for the GAO personnel and to coordinate report distribution. They are also responsible for following-up on the GAO reports. In particular, the due dates associated with these reports are critical.

Related to this activity, is the coordination of the "whistle blower" complaints. These must be kept confidential, but simple automation, using case numbers for example, could be useful in tracking these complaints.

4. Special Studies.

In addition to their regular workload, the Program Evaluation staff is required to conduct special studies usually at the direction of the Bureau Director or Associate Director and sometimes by the direction of their Division Chief. Since State Offices and other BLM organizations suggest their projects through the Review and Evaluation function mentioned earlier, they are not classified as Special Studies.

The Program Evaluation staff is comprised of six program evaluators, the Division Chief, and an Assistant Chief. The workload is evenly distributed among the six staff members and there is no particular specialty. In an average year, the Program Evaluation staff will conduct three General Management evaluations, three or four program evaluations, approximately three Administrative Procedure reviews, and two or three Information System reviews. Within the state offices, there will be two or three General Management evaluations per state office and approximately two program evaluations per state office.

The approximate level of workload of the various products is as follows: a program evaluation will take two to six months; a General Management evaluation will take about three months; and the GAO/OIG Coordination takes approximately 50% of one FTE. The workload for the Program Evaluation staff is determined by a "Call for Topics" at the beginning of each year in which the state supply suggested topics for the Program Evaluation staff. From this list of topics, the Program Evaluation staff develops their workplan. Other than the study reports that they develop, the Program Evaluation staff is responsible for only one other report, their End-of-Year Report. This report is a summary of all the bureau-wide evaluations conducted by the Program Evaluation staff including dates, topics, and the persons participating.

To support the program evaluation function, the BLM information systems must provide tracking capabilities for GAO jobs effecting BLM, "whistle blower" complaints, and evaluation training. A tickler system for the GAO job tracking would be useful. Also, since the evaluation staff deal a lot with field personnel, electronic mail and document transmission could be useful during the course of an evaluation.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Program Evaluation Division produces an End-of-Year Report. Other deadlines are determined by the type of project and the project-specific schedule.
- **Security/privacy:** Work products may have limited distribution but no unusual security requirements.
- **Response time:** Normally overnight or mail service turnaround is adequate. Actual response time required may depend on the urgency of the project and its nature.
- **Interfaces:** No system interfaces. Requires communications with State Offices.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Call-for-Topics responses from the State Offices.
- Special Studies Requests from BLM senior management

Major programatic outputs:

- End-of-Year Report
- General Management Evaluations, Program Evaluations, Administrative Procedure Reviews, Information System Reviews

Use of existing system: Not Applicable

Growth factors: Since the workload of the Program Evaluation Division is based on Special Study requests, topics suggested by the field, and staff availability, it is unlikely to grow or diminish. There are no plans to expand the Program Evaluation staff.

Part 4: Existing System

Not Applicable

<<< BLM Functional Requirement >>>

Financial Handling of Accounts, Collections, and Billings

Part 1: General Information

Associated Program:	Financial Management
User Organizations:	Denver Service Center, Office of Finance, Office of the Budget, State and District Budget Officers
Owner/Operator/Maintainer:	Denver Service Center, Financial Operations
Existing Automated System:	Financial Management System

Part 2: Description of Overall Program, Requirement, and Current Procedures

Currently within BLM, the financial system is centralized in DSC with Washington operating as a satellite office. The Finance Division in the Washington Office is responsible for providing policy and directives on all financial matters within the Bureau. In addition it provides financial support for the Washington Office. They are organized into two branches: Financial Management Systems, and Financial Reports and Operations.

Financial Management Systems Branch provides support for the following functions within BLM: the handling of accounts, the collection of monies, and billings. They also conduct internal financial reviews. Recently (within the last two years) FMS has become involved with monetary credits.

Financial Reports and Operations provides financial reports to the Department of Interior, the Treasury Department, and the Office of Management and Budget.

The Washington Office sends all obligations information to the DSC Honeywell DPS-8-70. The prior Washington Office used to attempt on-line data entry for T&A but the communications arrangement was terrible. Sending and receiving information to and from Denver was very unreliable due to poor transmission lines and multiplexor downtime. In addition, payroll received higher priority on the system. The data is now Air Expressed to DSC where it is manually keyed in. They are currently investigating the use of OCR's for data entry of Time and Attendance sheets and payroll input.

Currently, the Branch of Financial Management Systems within Finance Division in the Washington Office is responsible for recommending, reviewing and approving any system changes. DSC or the field offices implement these changes.

The system which supports FMS was designed in the '60's and is now antiquated. They are constantly plugging holes. Of the FMS ADP budget, 60-70% is earmarked for maintenance (hardware and software). Washington Office Finance Division feels more emphasis should be given to financial systems. The programming staff do not seem to understand that financial data is official. There is no priority or concern to make corrections. The FMS reports are so unreliable that most field managers use cuff records and rarely look at the reports.

Within the Denver Service Center, the Division of Financial Operations is responsible for maintaining and operating BLM's Financial Management System. BLM's Financial Management System is really a collection of seven systems designed to process specific categories of transactions: the Perpetual Inventory System, the Travel Advance System, the Range System, the Motor Vehicle System, the Lease System, the Miscellaneous Cost and Collection System, and the Time and Attendance.

The Perpetual Inventory System is the largest component of BLM's Financial Management System. It processes unliquidated obligations, expenditures from obligations, travel vouchers, and similar transactions. These amount to 130,000 payments per year, and approximately 260,000 total transactions per year. Input to this system is received by U.S. Mail from BLM District Offices. It is updated daily. Over the last year, the number of transactions processed has grown by about 5 to 7 percent.

The Perpetual Inventory System is updated daily. The Perpetual Inventory System generates most of the payments made by BLM, in the form of an automated tape in a format consistent with Standard Form 1166. This tape is sent to the Treasury Department Regional Disbursing Center in San Francisco. They actually print the checks and mails them to appropriate recipients. All BLM payments are issued from the San Francisco Regional Disbursing Center, with the exception of some checks generated by the Washington Office in Washington.

The Travel Advance System tracks unliquidated travel advances to ensure that any amount not used in legitimate travel is promptly repayed. Travel vouchers are keyed into the Financial Management System twice--once into the Perpetual Inventory System and once into the Travel System.

The Range System is used to track receipts from grazing leases awarded by BLM. The Range System accepts automated financial transactions from RMAS and deposit tickets reflecting range program receipts deposited in local banks by BLM District Offices. The Range System does not generate invoices or track true accounts receivable. Those functions are performed by RMAS. The Financial Management System's Range System matches deposit ticket amounts with the corresponding amounts from RMAS to ensure that all receipts have been properly deposited. The Range System also ensures that range accounting transactions are properly reflected in BLM's overall financial statements.

The Motor Vehicle System includes information about all BLM-owned vehicles (including heavy equipment such as tractors and bulldozers) as well as GSA vehicles that have been used by BLM for more than six months. The Motor Vehicle System ensures proper cost accounting of motor vehicle-related expenses so that vehicles are properly handled in BLM's Working Capital Fund. The Motor Vehicle System processes 5,000 Form 1520-42s each month. Each form contains 10 to 12 lines, each representing a separate transaction for a specific use of the vehicle. Approximately half of the Form 1520-42s are for GSA-owned vehicles and about half are for BLM-owned vehicles. The Motor Vehicle System interfaces with BLM's Property System; these interfaces are now being revised and will be completed next year. BLM owns or uses about 5,000 vehicles.

DSC plans to modify the Motor Vehicle System so that vehicle costs are allocated to BLM programs on a fixed, vehicle-specific ratio each month, rather than as the result of specific vehicle use transactions.

The Lease System performs functions analogous to those of the Range System, but for energy and mineral resources rather than grazing. The Lease System does not track royalties or bonus payments for oil and gas leases; these are handled by Minerals Management Service. It simply tracks the "per acre" charge for certain leases. The system contains records for approximately 35,000 to 40,000 leases, including Rights of Way and Special Use leases. The Lease System is currently under modification.

DSC is modifying the Lease Management System to allow direct data entry by field offices and to capture data from the Case Recordation System automatically rather than by duplicate data entry. Similar improvements are being made to the Range System and RMAS.

BLM also operates a Miscellaneous Cost and Collection System to process non-lease, non-range deposits and disbursements other than those made through the Perpetual Inventory System. This system processes a small volume of transactions and is not considered to be particularly important.

The Division of Financial Operations also operates BLM's front-end Time and Attendance Card Processing System. The Denver Service Center receives time and attendance cards from each BLM site, enters the data into its frond-end processing program, and forwards the resulting information to the PAY/PERS System. PAY/PERS is run by the Department of Interior's Bureau of Reclamation in Building 67 of the Denver Federal Center. After PAY/PERS has processed the time and attendance cards, it generates a cost accounting file which is returned to BLM for posting to the Financial Management System. PAY/PERS handles actual payroll payment to employees.

The distribution and proper accounting of labor costs is very important to BLM. They expend considerable effort to ensure proper editing and control. They process approximately 120,000 transactions per month. Multiple page time and attendance cards are common.

Each of these components of BLM's Financial Management System produce files on a monthly basis for posting to BLM's General Ledger. These files are known are CONSDARC, or Consolidated Disbursements, Accounts Receivable, and

Collections. It is mergered with the year-to-date CONSDARC and matched to BLM's Budget Data Base. These comparisons are used to generate financial reports for distribution to BLM managers.

BLM hopes to allow field office personnel to perform more direct data entry in order to eliminate cuff records, improve timeliness, and reduce the amount of paperwork required to process transactions through the Financial Management System. One technique for achieving this will be to use the Level 6 minicomputers in each State Office to do local processing and then roll up the data. A second technique will be to allow field office personnel direct access to the DPS-8/70 at the Denver Service Center.

Other anticipated areas for improvement include: better payments processing in order to avoid lost discounts and payment of interest penalties; more streamlined month-end processing in order to improve inquiry features and eliminate duplication; consolidating and improving the system's edit programs; and consolidation of data collection and entry.

The Division of Financial Operations has approximately 95 employees: 10 in the Branch of Data Control; 9 in the Financial Systems Staff; 14 in the Branch of General Accounting; and 60 in the Branch of Payroll and Payments. Of the 60 employees in the Branch of Payroll and Payments, approximately 30 are in the Payments Section (Perpetual Inventory), 23 in the Payroll Section, and 6 in the Administrative Section.

The State and District Offices provide expense and revenue information for FMS but do not use the output reports. District personnel in particular feel the reports are inaccurate, not timely, include budget projections which are of no use to them, and insufficiently detailed to manage projects. They need a project financial tracking system. Seventy percent of the FMS subcodes were removed during the recent redesign of FMS to streamline the system and improve its functionality as a budget tool.

Without these subcodes, managers do not know the correct distribution of the expenses they are incurring. In the case of programs such as Cadastral Survey, where every project could be funded separately, this detail means the difference between overrunning budgets or losing money.

To support the handling of accounts function, the BLM information system must collect expense, revenue, and obligation information from the field in a timely manner and prepare transactions for the General Ledger system. It should also report to the field personnel in appropriate detail and in a timely manner the net effect of the financial transactions on their area of responsibility. Data should be easy to enter and captured only once.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Financial Management Systems is responsible for monthly financial reports.
- **Security/privacy:** Data must be tamper resistant.
- **Response time:** Batch turnaround is adequate.
- **Interfaces:** Need to exchange significant financial data with MMS and may possibly need to do so with the Forest Service as well. FMS also receives data input from virtually every BLM program.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Operational expenses and charges from Washington Office, States, and District Offices
- T&A sheets
- Revenue reports and projections
- Obligations
- Proposed modifications to FMS

Major programatic outputs:

- Financial reviews
- Financial policy
- Review and recommendations for FMS changes
- General Ledger postings

Use of existing system:

- **Number of users:** 3-5(See Budget for additional user count)
- **Amount of use:** FMS is used monthly

- **Distribution by office:** The Washington Office Finance Division and Denver Service Center Finance are responsible for FMS. The State Offices and DSC do most of the data entry.
- **Refer to Figure C-6 for sizing information**

Growth factors: Although overall growth is unlikely, the distribution of workload will change if the Land Interchange Agreement with the Forest Service occurs.

Also, if Denver Service Center switches to cost-recovery accounting, as is likely within the next two years, the financial system will require modification to accomodate it.

BLM is obviously affected by Reform 88 efforts in the Department of the Interior. DOI has decided to consolidate payroll processing in the Bureau of Reclamation. This means that BLM's front-end Time and Attendance Card Processing function will no longer be performed within the bureau. In addition, the Department of the Interior is conducting a study of whether or not to consolidate its administrative and financial payment systems; this study is being performed under contract.

Part 4: Existing System

Name: Financial Management System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: COBOL

Telecommunications: BLM Network

Figure C-6

Management of Accounts
Sample of Monthly Financial Records by FMS Subsystem and State

September 1985

	Cost/Collections	Motor Vehicle	Payroll	Range/Lease	Perpetual	Travel	Total
Washington Office	178	20	7,062	---	2,695	13	9,968
Alaska	698	1,053	39,546	6	10,145	483	51,931
Arizona	410	2,085	11,790	85	4,354	272	18,996
California	627	5,687	27,356	180	5,438	382	39,670
Colorado	629	4,452	20,725	250	4,693	428	31,177
Eastern States	164	313	4,452	8	880	57	5,874
Idaho	480	6,310	28,155	258	4,424	283	39,910
Montana	411	3,068	16,180	137	4,446	300	24,542
New Mexico	506	3,525	15,474	353	3,882	266	24,006
Nevada	413	6,997	28,124	328	7,092	253	43,207
Oregon	1,163	12,771	44,673	263	9,594	484	68,948
Utah	617	3,967	16,641	265	4,853	365	26,708
Wyoming	391	4,502	25,177	422	5,250	387	36,129
Other (DSC and BIFC)	2,782	1,401	21,676	50	11,924	510	37,343
TOTAL	9,469	56,151	307,031	2,605	79,670	4,483	459,409

Source: D-510, Division of Financial Operations

<<< BLM Functional Requirement >>>

Financial Reporting

Part 1: General Information

Associated Program:	Finance
User Organizations:	Branch of Financial Reports and Operations, BLM; Department of Interior; Treasury Department; and Office of Management and Budget
Owner/Operator/Maintainer:	Branch of Financial Reports and Operations
Existing Automated System:	Financial Management System

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Washington Office Division of Finance is responsible providing policy and directives on all financial matters within the Bureau. In addition this office provides financial support for the Washington Office. They are organized into two branches: Financial Management Systems, and Financial Reports and Operations. Financial Management Systems provides support for the following functions within BLM: the handling of accounts, the collection of monies, and billings. They also conduct internal financial reviews. Recently (within the last two years) FMS has become involved with monetary credits.

Financial Reports and Operations provides financial reports to the Department of Interior, the Treasury Department, and the Office of Management and Budget. Currently within BLM, the financial system is centralized in DSC with Washington operating as a satellite office.

Some of the information for the reports to DOI, Treasury and OMB is automated but the actual reports are prepared manually. The Financial Reporting staff feel this process could be fully automated.

To support the financial reporting function, the BLM information systems should produce reports aggregated in appropriate detail and by appropriate groupings for the Financial Reporting staff to use the reports without further data transcription or manipulation.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Financial reporting prepares monthly financial reports to Treasury, Interior, and OMB
- **Security/privacy:** Data must be tamper resistant but not really sensitive at this level of aggregation and all historical data.
- **Response time:** Next day response would be adequate and still allow last minute adjustments.
- **Interfaces:** Must interface with FMS system
- **Reliability:** Normal business standards would be sufficient.

Major programmatic inputs:

- Operating expenses and charges
- Receipts
- Obligations

Major programatic outputs:

- Financial position statements

Use of existing system:

- **Number of users:** No on-line users, only reports.
- **Amount of use:** Use FMS output reports every month.
- **Distribution by office:** Washington Office only
- **Sizing Information:** In one fiscal year, FMS produces two drawers of microfiche.

Growth factors: No additional reporting requirements anticipated.

Part 4: Existing System

Name:	Financial Management System
Location:	Denver Service Center
Hardware:	Honeywell DPS-8/70
Software:	COBOL
Telecommunications:	U.S. Postal Service

<<< BLM Functional Requirement >>>

Incident Investigation and Reporting

Part 1: General Information

Associated Program:	Resource Protection
User Organizations:	Resource Protection Staff
Owner/Operator/Maintainer:	Resource Protection Staff
Existing Automated System:	LEADS, LIDS

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Resource Protection Staff performs a law enforcement function. It is called the Resource Protection Staff to avoid the connotations of the "law enforcement" title. The Washington Office is responsible primarily for providing policy and some oversight; and direction of multi-state operations. The Resource Protection's Special Agents in Charge (SACs) are more investigative than the classic law enforcement function. The uniformed counterparts of the special agents, the Rangers, are actually under the Bureau of Recreation; however, they reorganized under the Resource Protection Staff sometime in the near future.

As land owners, BLM property comes under the jurisdiction of county, state, and other local law enforcement authorities. The intent in forming Resource Protection is not to replace local authorities but to augment them, particularly in remote areas where local authorities may not be available. The Resource Protection Staff was formed as a result of law suits against the Bureau of Land Management for not exercising sufficient care on public lands.

The Washington Office Resource Protection Staff is responsible for program and policy oversight as well as informal line of authority over the SAC for each state. The SAC reports directly to the deputy state director in each state office. They are not responsible for enforcement al all laws on the public lands, only Federal laws. Washington Office directs any multi-state operations, and also develops training materials, although they do not conduct the actual training. They coordinate with other law enforcement groups such as the Drug Enforcement Agency and the Forest Service, usually through memos or meetings. They are responsible for an Annual Marijuana Report on the public lands and an overall crime report.

Their workload consists primarily of minerals enforcement in the east, and coal and gas in the west. They usually deal with thefts or defacement of public property. Another area of high activity is Horse and Burros Adoption Program violations, usually involving animal abuse or slaughter.

Law enforcement agreements provide set-aside payments to Sheriffs in order to encourage to enforce laws on the public lands. There are 63 such agreements currently, but the contracts are coordinated by contract personnel, not law enforcement officials.

As a result, Sheriffs do not necessarily report crimes detected on the public lands to the Bureau of Land Management. There is no common amount charged for enforcement. There are no standards for the kinds of enforcement conducted, or who is authorized to enforce the laws. Proper coordination of these law enforcement agreements would make enforcement on the public lands more consistent, as well as improve information concerning activities on the public lands.

Washington Office noticed an increase in incidents but, in their opinion, this results from better awareness due to the Law Enforcement Automated Detection System (LEADS) not increased activity. LEADS allows them to track incident reports better than previously possible.

Another automated tool is the LANDSAT Inventory and Detection Program (LID). It became operational in October 1982 to assist the Unauthorized Use Detection Program. Two criteria were used to screen areas for its use: 1) large amounts of Federally owned minerals, and 2) high mining potential. The sites covered by LID has expanded to seven project areas and eleven LANDSAT scenes by FY84, over 4,000,000 acres of Federally owned minerals.

The LID system relies on comparison of satellite pictures taken over time to detect a change in the surface which might indicate unauthorized mining. BLM tries to detect unauthorized mining on Federal land, detect mining operations adjacent to Federal land where encroachment could occur, and raise public awareness that mineral usage is being monitored to discourage attempts at unauthorized use.

They feel ADP support would be useful for keeping inventory of BLM weapons currently kept at the Denver Service Center; maintaining agent profiles to identify special training needed or taken; and coordinating law enforcement agreements.

The LEADS system provides much more information than they actually require. It contains detailed information such as the township and section description of the land associated with the crime and legal actions. It is not currently being used. It is being redesigned to reduce redundance in its three files: the criminal file, the index file, and the trespass file. Each file has approximately 60 data elements. A much simpler system with less data would be more useful.

Current ADP support for the Washington Office, other than the LEADS and LIDS systems, consists of one terminal, a Wang PC with Lotus on it. There is no access to the Denver Service Center. The Resource Protection people purchased information from the Geological Survey in the past, called PROFILE, to identify possible marijuana environments. However, the information was too expensive and once they had identified the areas, there were very limited options for them to take advantage of the information.

They feel they need more ADP support in the area of tracing Horse and Burro permits and violations, and also coordinating law enforcement agreements. One of the biggest hurdles for them in law enforcement is staff intimidation by the equipment. They feel they need some help to overcome this initial reluctance.

A SAC in a State Office listed three systems that he could [illegible] he had access:

- The National Crime Information Center System (NCIC)
- The Computer Criminal History System (CCHS)
- El Paso Information Center (EPIC) System.

The SACs will also occasionally go to the Bureau of Alcohol, Tobacco and Firearms (BATF), the FBI, or the state Bureau of Investigation to get information they need.

To support the incident investigation and reporting function, the BLM information systems should provide the ability to track investigations from their inception to their resolution with only the data the SAC will find pertinent. The BLM system should allow the SAC access to outside crime data bases. Also, the ability to track enforcement inventory and training should be available but not necessarily as a Resource Protection System. The BLM system should consider advanced technology crime-detection techniques as a relatively low priority since the ability of BLM to act on the information gathered would be limited.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Annual reports on Marijuana on the Public Land and on Incidents of Crime on the Public Lands.
- **Security/privacy:** Data would be sensitive, but normal business standards for ADP security and effective administrative procedures would be sufficient.
- **Response time:** Work in investigative in nature not enforcing so immediate response time would not be required.
- **Interfaces:** Outside law enforcement data bases such as NCIC, CCHS, and EPIC.

- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Reported or detected violations of Federal law on Public Lands.

Major programatic outputs:

- Report on Marijuana on Public Land
- Tracking Report on Criminal Incidents on Public Land
- Investigation and disposition of alleged incidents

Use of existing system:

- **Number of users:** 22
- **Amount of use:** Very low and irregular usage.
- **Distribution by office:** SAC's are limited to the state offices
- **Refer to Figure C-7 for sizing information**

Growth factors: The Rangers will be transferred from the Bureau of Reclamation but the nature of their work is different than the BLM agents. The Resource Protection staff expect to grow slightly but increases in activity will be primarily due to increased knowledge of the activities currently going on.

Part 4: Existing System

Name:	Law Enforcement Automated Detection System
Location:	Eastern States
Hardware:	Honeywell Level 6
Software:	ASPEN
Telecommunications:	BLM Network

Name:	Landsat Inventory Detection
Location:	Denver Service Center
Hardware:	DPS-8/70
Software:	Unknown
Telecommunications:	BLM Network

Figure C-7

Cases by State

Washington Office	---
Denver Service Center	---
Alaska	332
Arizona	157
California	686
Colorado	94
Idaho	612
Montana	98
Nevada	121
New Mexico	1,021
Oregon	398
Utah	27
Wyoming	122
Eastern State Office	284
TOTAL	3,960

Source: Public Land Statistics 1983

<<< BLM Functional Requirement >>>

Plan and Conduct Cadastral Surveys

Part 1: General Information

Associated Program: Cadastral Survey

User Organizations: Washington Office, Denver Service Center, State Offices

Owner/Operator/Maintainer: Denver Service Center

Existing Automated System: Cadastral Field Notes Index; FMS; Field Notes Phrases Systems

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Part 2: Description of Overall Program, Requirement, and Current Procedures

The cadastral survey provides the basis for all legal land records. The State Office is the operational level for cadastral survey, although surveyors may be assigned to a district or resource area for an extended period of time.

Most original surveying is occurring in Alaska. Ten to fifteen million acres are being surveyed each year using highly automated techniques. These are also highly specialized techniques and not applicable to general ADP. Within the continental United States, resurveying and validation work to defend titles and check survey results represents the bulk of the workload.

Responsibilities are divided between east and west. The Cadastral Survey Division in the Eastern States Office is responsible for surveying and resurveying all land in the Eastern States not belonging to the original thirteen colonies. In the East, this involves a great deal of resurveying because the original markers, often wooden survey poles, need replacement. The ESO is also responsible for retaining the official notes generated by the surveying process.

The ESO Cadastral Survey Division is organized into two branches: Field Operations Branch, based in Rolla, Missouri; and the Office Engineering Branch. All surveying is conducted out of Rolla. The Office Engineering Branch schedules the surveys and provides support in actually drawing the plattes, storing the field notes made by the surveyors, processing paperwork associated with surveys, and tracking survey activities against the budget.

ESO assumed all the old General Land Office functions not assumed by the Washington Office. They perform surveys and resurveys, title adjuducation, and serve as expert witnesses in court cases. Only one third of their surveying funds are used to survey BLM land. The rest is done for other agencies, bureaus, or private interests. Some is original surveying but much of it is confirming old boundaries. The original surveys used natural landmarks or wooden survey poles to mark coordinates. Many of these have since been destroyed or deteriorated.

There are eight field surveying teams. They report progress to client agencies every two weeks along with their payroll. Within BLM, they report annually.

In ESO, they have some unusual title problems originating in the South. The Confederates created their own land titles and many of the original titles were destroyed or lost. Since the Federal government does not recognize the Confederate titles, Cadastral is sometimes requested to research a tract to determine title.

Some ESO staff feel ALMRS would be of little use to ESO and it would not be in BLM's best interest to put ESO records into ALMRS. They view it as a Western system and has no problem with it as such but they feel the record systems in the East are so different from the West that incorporating the two in one system would make the system unnecessarily complicated.

Office Engineering in ESO schedules the surveys based on the funds provided and the estimated job size. They keep a list of requested jobs and their status.

They perform approximately 12 surveys a year. The secretary logs the township, range, and acreage for each project. If a project will take more than five years, they establish a project field office to reduce reimburseable expenses.

Most communication with the field is conducted by mail.

They have ten staff. One FTE is assigned to maintain the official survey records. This includes an official copy for Eastern States and the Secretary of the Interior's copy for the Western States and Alaska.

In the western states, cadastral activity varies widely from state to state. Colorado, California, New Mexico, and Alaska have the heaviest survey activity. Alaska is very active because of the vast amounts of desirable land there which have never been surveyed. Colorado, California, and New Mexico are given line item appropriations by Congress for cadastral surveying as a result of a Congressional investigation about eight years ago.

In Oregon, a surveyor described the survey process. A survey begins with a request from the Forest Service or other outside agencies to the State Office. The State Office diagrams the corners of the survey and a draftsman creates specs which they are sent to the District Office where this surveyor was stationed. They then do the survey.

They begin by researching county or Forest Service surveys, and notifying the land owners in the adjacent land that the survey will take place. Once in the field, they trace all of the existing lines found during the research. They reduce all existing lines to straight lines and set monument corners; subdivide the survey and make a rough plat on closures and bearings. A narrative is written for each subdivided section. They come back into the office and create a progress report on each completed line, called a unit. They report the corners set, the miles surveyed, and include timesheets recording survey time. They are required to create a weekly report by number of miles surveyed.

They felt it was easier to develop the notes and the bearings in the field. They could use automation but they are skeptical of learning how to use ADP.

There is a system which Colorado developed for inputting symbols in place of data onto an automated system. They feel the USGS has tighter controls on setting up their overlays and that BLM should use this for GIS. They would like to tie the Forest Service, county, and BLM survey information together and file all of the markers in one place. BLM currently has a card file of their information at Lakeview and a photocopy for each Resource Area. The Forest Service and the county, surveying non-BLM land, frequently refer to BLM records.

They use the Hewlitt-Packard 41C programs to break down information during the cadastral surveys in the field.

The Branch of Cadastral Survey in Colorado consists of three sections each of which have one or two units in it. The sections are the Office of Engineering, the Field Survey, and the Project Operations sections. There are about sixty people in these three sections and most are surveyors.

The Project Operations Section in Colorado performs survey work for the public and other government agencies such as the Forest Service, Bureau of Indian Affairs and Bureau of Reclamation. A Memo of Understand (mou) is the basis for the survey. Funds are frequently transferred from other agencies or in the case of public surveys monies are collected for the work. Peak time for this work is between May and November.

The Colorado State Office also develops techniques and test equipment for surveys. BLM has been the leader in testing and using survey equipment. DSC has been involved in an equipment sharing program.

In Colorado, the field survey section performs surveys for about 7,000 outside companies, about 9,800 for the Forest Service, and about 4,500 for BLM. Monies are either transferred funds or, in the case of outside agencies, prepaid.

There is a major review of surveys underway in Colorado. All the surveys must be studied and all the overlays on 3500 townships readjusted. These will probably be done at the rate of 20 to 30 percent of the existing plats each year.

For most cadastral project manager, FMS is their primary ADP support and they feel it does not meet their needs. They can never reconcile FMS data with actual project status. For ESO, FMS aggregates all 4900 cadasral projects into one account. They eventually gets microfiche which are of some help but they are extremely late. For example, they just recently received August's reports. Due to the lateness, they were unaware of $7500 still available in their budget to survey. It was lost with the close of the fiscal year.

The projections in FMS are not useful for cadastral project managers because they do not consider the seasonal nature of the cadastral work. Their busiest season occurs as the fiscal year is closing. Often expenses for a project are arriving just as the fiscal year is being closed out. The FMS projections make it appear as if they are underspending when they may in fact be short for their intended activity level. FMS projections are based on the activity level in the fiscal year to date and does not consider the large demand for surveys in the spring, summer, and early fall.

The telephone system between ESO and the Rolla District Office creates communication difficulties. ESO has experienced the phone ringing with no answer, bad quality connections, and busy signals when no one was on the line.

Colorado uses the Hewlett-Packard 85 to calculate property lines. The HP 85 is 10 years old and not interactive. They have to define lines for each application and cannot go from one coordinate to another. They are looking at systems to replace the Hewlett-Packard and have considered the TCC as a DBMS but it has no engineering or CAD capabilities. HASP has engineering and a package of coordinate geometry called COGO, but not administration. New Mexico is looking at Techtronics but it has no survey information.

Colorado also uses a Sanyo minicomputer to create text files and to perform calculations on information which is generated in the field. They no longer use the Level 6. They found it too unreliable.

Most of the surveyors feel the approach of entering survey information into GIS mathematically will not be correct. The DOPPLER method has been attempted by California, based on the DOPPLER effect. Using a Hewlett-Packard 9860, the California office is using a reduction program and satellite positioning system to establish locations on earth; data must be entered repeatedly and adjusted until it is accurate. Colorado does not find this adequate for representing survey information.

Cadastral Survey section in the Montana State Office feels they do not receive much ADP support. The three states that receive considerable technical support are the three states with the most Cadastral Survey work: Colorado, California, and Alaska. MSO received some software products developed for cadastral work in another State from Denver. However, it was developed without consulting them, and delivered with no training and no support. Many of these systems are inappropriate for use in the Montana and other state offices, but appropriate for the three states mentioned before.

Often these heavy activity States receive equipment the other States need. For example, the law requires that coordinates be listed in every quadrant surveyed. However, to develop these coordinates requires DOPLAR or GEOCEIVER equipment. BLM owns only eight pieces of such equipment. In the last year, four of these were in Alaska, two were in California, and the last two were in Colorado. Until two months ago, the Montana Cadastral Section did not have access to the Honeywell DPS-8/70 in DSC.

The top priority for Cadastral is modification to FMS to provide effective progress reporting on projects. They would like to see two or three day turn-around and only actual expenses, no projections. DSC has started to work with cadastral on this.

The two things Montana cited as most important for the future of Cadastral are: direction from the Washington Office to clarify what they should be doing; and training in technology transfer to support the Cadastral group after they receive software from an ADP team.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Quarterly reporting on survey progress to outside bureaus.
- **Security/privacy:** Since these records represent legal land records, data integrity is critical but normal business standards for security would satisfy these requirements.
- **Response time:** For technical calculations in the field, quick response time will be important. For field processing after survey completion, batch processing would be sufficient.
- **Interfaces:** A BLM surveying system should be able to exchange data with other land agencies, such as the Forest Service.
- **Reliability:** Normal business standards for reliability would be adequate.

Major programmatic inputs:

- Memos of understanding to initiate surveys.
- Funds from agencies and private organizations.

Major programatic outputs:

- Cadastral survey field notes.
- Monthly and quarterly program reports.

Use of existing system:

- Number of users: 100-150 users
- Amount of use: Retrieval usage would be seasonal. Update usage would be heavy in the winter, probably daily.
- Distribution by office: Systems reside on local HP processors or at DSC. Use is almost exclusively State Office level for DSC systems.
- Refer to Figure C-8 for sizing information

Growth factors: The cadastral survey program has more survey requests than they can accomplish. They do not anticipate any growth in survey requests, nor any diminishing of their backlog.

Part 4: Existing System

Name: Cadastral Field Notes Index

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: ASPEN/2

Telecommunications: BLM Network

Name: Financial Management System

Location: Denver Service Center

Hardware: DPS-8/70

Software: COBOL

Telecommunications: BLM Network

Figure C-8
Plan and Perform Cadastral Surveys

	Acres Surveyed	Resurveyed
Washington Office	---	---
Denver Service Center	---	---
Alaska	39,847	---
Arizona	95	52,466
California	276	125,141
Colorado	---	344,856
Idaho	---	79,859
Montana	1,161	129,499
Nevada	3,089	227,456
New Mexico	46,636	70,148
Oregon	640	149,200
Utah	27,037	148,160
Wyoming	---	243,715
Eastern State Offices	224	273,651
TOTAL	119,005 acres	1,844,151 acres

Source: Public Land Statistics

Name:	Field Note Phrases System
Location:	Oregon State Office
Hardware:	Wang Word Processor
Software:	Wang Word Processor
Telecommunications:	N/A

<<< BLM Functional Requirement >>>

Maintain Cadastral Survey Field Notes

Part 1: General Information

Associated Program:	Cadastral Survey
User Organizations:	Surveyors in the field, State Offices, Denver Service Center
Owner/Operator/Maintainer:	Denver Service Center
Existing Automated System:	Cadastral Field Note System in Denver Service Center; Field Note System on Colorado Wang

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Part 2: Description of Overall Program, Requirement, and Current Procedures

Second only to performing the cadastral surveys themselves, is the responsibility of maintaining the cadastral survey field notes. These provide detailed descriptions of the land as the surveyor found it. They are official records and critical references for the surveyors.

When surveyors resurvey or verify boundaries, the cadastral field notes are critical. A survey begins with a request from the Forest Service or other outside agencies to the State Office; the State Office diagrams the corners of the survey and a draftsman creates specs which they send to the District Office from which the survey is conducted. The surveyors first step is researching past BLM, county or Forest Service surveys. They notify the land owners in the adjacent land that the survey will take place, and then go out into the field to survey.

Before they begin their field notes, they trace all existing lines found in their research. They reduce all existing lines to straight lines and set monument corners. They subdivide the survey and make a rough plat on closures and bearings. A narrative is written of each subdivided section. They go back to the office and create a progress report on each completed line, called a unit. They report the corners set, the miles surveyed, and include timesheets recording survey time. These are the basics of the survey field notes.

The Cadastral Survey Division in the Eastern States Office is responsible for surveying and resurveying all land in the Eastern States not belonging to the original thirteen colonies. The cadastral survey provides the basis for all legal land records. In the East, this involves a great deal of resurveying because the original markers, often wooden survey poles, need replacement. The are also responsible for retaining the official notes generated by the surveying process.

The ESO Cadastral Survey Division is organized into two branches: Field Operations Branch, based in Rolla, Missouri; and the Office Engineering Branch. All surveying is conducted out of Rolla. The Office Engineering Branch stores the field notes made by the surveyors.

ESO performs about 12 surveys a year. The secretary logs the township, range, and acreage for each project. If a project will take more than five years, they establish a project field office to reduce reimburseable expenses.

There are approximately ten staff. One FTE is assigned to maintain the official survey records. This includes an official copy for Eastern States and the Secretary of the Interior's copy for the Western States and Alaska.

In Montana, Cadastral Survey has between ten and twelve survey teams in the field at a time. The State Office Cadastral staff use an index of the Cadastral field notes available on the Denver Service Center (DSC) and microfiche of the original field notes. The DSC takes the notes, indexes them, microfiches them, and sends them back to the Cadastral Survey group.

The Colorado State Office does not use the Cadastral Survey Field Notes system out of DSC. They use the Wang word processor for field note writing. The Oregon State Office has also established standard phrases on their word processor to develop cadastral survey notes.

The CSO field survey section performs surveys for about 7,000 outside companies and about 9,800 for the Forest Service and about 4,500 for BLM. Monies are either transferred funds or, in the case of outside agencies, paid for. Each survey generates a set of field notes.

Typically, the State Office of Engineering within the Cadastral organization maintains records of surveys including two sets of the original Field Notes. One set goes to the Eastern State Office and the other is microfiched and stored in the Public Room. They also handle protests and appeals. They reevaluate surveys and issue decisions or suggest protestors who are still dissatisfied appeal to the Interior Board of Land Appeals (IBLA). The State Office types the notes and draws up the Plats from surveys to create legal documents. They also prepare survey instructions for surveys.

To support maintenance of the cadastral field notes, the BLM information systems should provide standard phrasing to make generation of the notes simpler and consistent across the Bureau; and provide retrieval capability for surveyors to easily locate and reference previous survey notes.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** No deadline for submitting survey field notes was indicated. As a matter of practice, surveyors write up their notes during low activity periods and the winter months.
- **Security/privacy:** Data integrity is critical but privacy is not a concern. Normal business standards for security would be adequate.
- **Response time:** Batch retrieval and update of field notes or field note indexes would be sufficient.
- **Interfaces:** BLM may consider exchanging field notes with some of the other land agencies, such as the Forest Service, in the future to reduce research time for the surveyors on lands adjacent to other agency land.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Results of field surveys.
- Requests for resurvey or boundary verification.

Major programatic outputs:

- Indexes for easy field note reference.
- Field notes on microfilm in State Offices.
- Master copy of notes in ESO.

Use of existing system:

- **Number of users:** 100 - 150
- **Amount of use:** Steady system use but low activity on any specific set of field notes. Reference access in spring and fall. Update in winter.
- **Distribution by office:** State Offices maintain copies of the field notes. DSC maintains an index. Surveyors usually access the system from the State Office.

- Refer to Figure C-9 for sizing information

Growth factors: There is no projected growth in cadastral survey activity so no growth in survey field notes is anticipated.

Part 4: Existing System

Name: Cadastral Field Notes Index
Location: Denver Service Center
Hardware: Honeywell DPS-8/70
Software: ASPEN/2
Telecommunications: BLM Network

Name: Colorado Field Notes System
Location: Colorado State Office
Hardware: Wang OIS
Software: Wang Word Processor
Telecommunications: N/A

Name: Common Field Note Phrases System
Location: Oregon State Office
Hardware: Wang OIS
Software: Wang Word Processor
Telecommunications: N/A

Figure C-9. Plats Accepted by State

	Field Surveys	Supplemental Plats
Washington Office	---	---
Denver Service Center	---	---
Alaska	228	3
Arizona	44	9
California	50	15
Colorado	92	9
Idaho	23	9
Montana	57	3
Nevada	24	3
New Mexico	42	6
Oregon	69	4
Utah	21	2
Wyoming	15	7
Eastern States	73	---
TOTAL	738	70

*Source: Public Land Statistics

<<< BLM Functional Requirement >>>

Track Cadastral Surveys for
Outside Agencies

Part 1: General Information

Associated Program:	Cadastral Survey
User Organizations:	State Offices
Owner/Operator/Maintainer:	Denver Service Center
Existing Automated System:	Financial Management System

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Cadastral Survey provides the basis for all legal land records. Although Cadastral Survey is placed within BLM, most of the surveys they conduct are for outside agencies. Tracking the funds for these projects is a major responsibility for Cadastral.

In the Eastern States Office, the Cadastral Survey Division is responsible for surveying and resurveying all land in the Eastern States not belonging to the original thirteen colonies. In the East, this involves a great deal of resurveying because the original markers, often wooden survey poles, need replacement. The are also responsible for retaining the official notes generated by the surveying process.

The ESO Cadastral Survey Division is organized into two branches: Field Operations Branch, based in Rolla, Missouri; and the Office Engineering Branch. All surveying is conducted out of Rolla. The Office Engineering Branch schedules the surveys and provides support in actually drawing the plattes, storing the field notes made by the surveyors, processing paperwork associated with surveys, and tracking survey activities against the budget.

Only one third of ESO's surveying funds are used to survey BLM land. The rest is done for other agencies, bureaus, or private interests. Some is original surveying but much of it is confirming old boundaries. The original surveys used natural landmarks or wooden survey poles to mark coordinates. Many of these have since been destroyed or deteriorated.

The agreements with outside agencies vary. Some funding is by direct allocation and some is by reimbursement. BLM issues progress reports monthly or every two weeks, depending. The agreement is usually in memo form but the terms of payment can differ substantially. BLM could be paid based on number of miles surveyed, number of survey posts set, number of other monuments set, etc. These differences require close attention to each project to assure it follows the agreement under which it was initiated.

In Colorado, the field survey section performs surveys for about 7,000 outside companies and about 9,800 for the Forest Service and about 4,500 for BLM. Monies are either transfered funds or, in the case of outside agencies, paid for.

FMS is the primary financial reporting tool for BLM project managers, including cadastral. It does not provide the timely information necessary to track specific projects. They must report to each agency which has authorized surveying work exactly how much of their money has been spent. They must also anticipate when a project will run out of funds so work can be stopped before they overrun the budget.

The projections in FMS are not useful to cadastral project managers. The projections do not consider the seasonal nature of the cadastral work. Cadastral's busiest season comes just when the fiscal year is closing. Often expenses for a project are arriving just as the fiscal year is being closed out. The FMS projections make it appear as if the project is underspending when it may in fact be short of funds for the intended activity level.

In ESO's opinion, the top priority for Cadastral is modification to FMS to provide effective progress reporting on projects. They would like two or three day turn-around and only actual expenses, no projections.

ESO cannot reconcile FMS figures with actual project status. FMS aggregates all 4,900 ESO cadastral projects into one account. Microfiche eventually arrive but they are extremely late. For example, they just recently received August's reports. Due to this lateness, $7500 still available in their budget to survey was lost with the close of the fiscal year. The reports are not in a usable form for Cadastral.

These sentiments were expressed in other State Offices. In Colorado, $150,000 are spent every two weeks on surveys and since the funds are reimbursable the work needs close monitoring. FMS is too late and too aggregated to prevent overrun.

To support tracking of cadastral survey funds provided by organizations outside of BLM, the BLM information systems must provide a mechanism consistent with the FMS system which supplies the detailed costs necessary to control outside funded survey projects.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Cadastral reports every two weeks or monthly to their outside survey clients, depending on their agreement.
- **Security/privacy:** Normal business standards for security would be sufficient.
- **Response time:** Two or three day turnaround would be sufficient.
- **Interfaces:** Must be consistent with the FMS system.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Memorandums of Understanding to authorize survey work.
- Expenses incurred during the surveying.

Major programatic outputs:

- Periodic progress reports.

Use of existing system:

- **Number of users:** At least one for each State Office, more in states with heavy surveying activity.
- **Amount of use:** Monthly
- **Distribution by office:** Primarily used at the State Offices.
- **Refer to Figure C-10 for sizing information**

Growth factors: No anticipated growth.

Part 4: Existing System

Name:	Financial Management System
Location:	Denver Service Center
Hardware:	Honeywell DPS-8/70
Software:	COBOL
Telecommunications:	BLM Network

Figure C-10
Monitor Use of Outside Agency Funds
Acres Surveyed for Outside Agencies

	Acres Surveyed	Resurveyed
Washington Office	---	---
Denver Service Center	---	---
Alaska	39,847	---
Arizona	95	38,410
California	108	45,358
Colorado	---	191,566
Idaho	---	51,742
Montana	965	32,742
Nevada	1,862	1,706
New Mexico	46,636	46,636
Oregon	---	40,400
Utah	---	50,560
Wyoming	---	4,805
Eastern State Office	---	273,651
TOTAL	89,513	777,576

* Source: Public Land Statistics 1983

<<< BLM Functional Requirement >>>

Cartographic Services and Geographic Information Systems

Part 1: General Information

Associated Program:	Engineering, and Cadastral Survey
User Organizations:	State, district, Resource Area resource staff; Cadastral Survey and Engineering Staff at the State and District level
Owner/Operator/Maintainer:	Cadastral Survey and Engineering
Existing Automated System:	MOSS, IDEMS, Limited support from ORCA

Part 2: Description of Overall Program, Requirement, and Current Procedures

Cartographical Services provides physical map drawing services. Cartographic Services can be viewed as technical drawing (Engineering), resource documentation (Minerals or Lands), or survey recordation (Cadastral Survey).

The Cartographic Services in BLM are provided by Cadastral Survey, Engineering, or Administrative Services depending on the organization involved. Their responsibilities include the development and maintainance of maps. Within the Washington Office, the Division of Engineering Services has Mapping and Geographic Information Systems as one of its major responibilities. They produce no major reports of their own but they provide technical support for other organizations which do. For example, they produce two or three reports for the Geological Survey.

The maps developed by the cartographers are used in the public reading room. The information on the maps is in the form of small logos interpreted by a legend at the bottom of the map. They illustrate things such as easements and Rights-of-Way or wells. Each type of land action has its own logo.

All land applications must be put on the maps in 5 days. If a person then withdraws an application for certain land use, the maps have to be changed to reflect that change. Leases are also put on the maps when a lease is granted.

The Master Title Plat (MTP) is the base plat, and all other plats are overlay plats which would show oil and gas, hardrock, coal easements and so forth. There are on an average three supplemental plats for each Section in a township and since there are 36 sections, there could be up to 108 plats for one township.

The WO Geographic Information Systems function within Engineering is closely tied to mapping and map overlays while GIS as commonly referenced in BLM to software used by some states to map and analyze resource data. It is supported by an automated system in Denver. However, the WO GIS staff use only limited data to include on a few reports so they feel they do not require automation. The Washington Office staff feel the resource managers are the primary customers for the Geographic Information Systems and mapping. Initial users would be the planners, particularly as resource planning becomes an even more important function within BLM.

Geographic Information Systems (GIS) in BLM provide many analytical capabilities to support field staff in addition to automated support for mapping but it is the GIS capability to support which brings it within the responsibility area of this organization.

The Washington Office staff concentrates on the automated support tools for mapping rather than the mapping process itself. Mapping in the east is conducted by Eastern States Office. WO is responsible for policy interpretation and allocation of data management funds for the GIS and Remote Sensing. They are also responsible for policy decisions concerning the Map Overlay and Statistical System (MOSS). MOSS is actually the vector system component of GIS. It is a family of software in the public domain. It supports over 180 people currently and runs out of the Denver Service Center. The other component of GIS is called IDEMS. It is a raster system which involves digitizes satellite information. GIS funding is allocated by WO to DSC. All the funding for the State Office programs are controlled through DSC.

The Denver Service Center provides technical support for these resource mapping tools within their Technical and Scientific Systems in the Division of Advanced Data Technology (D440). D440 is divided into three branches: Graphic Systems Development, Remote Sensing, and Technical Applications Assistance. This support has traditionally concentrated on digitizing and mapping resource information rather than cartagraphic surface characteristics such as records, oil wells, or rights-of-way. Some states such as Colorado do make use of remote sensing to develop maps.

In each State, the organization which provides cartographic support differs. In Oregon, the Branch of Cadastral Survey provides cartographic support. The Branch of Cadastral Survey has two Cadastral Sections which are composed primarily of land surveyors, and a Cartographic Section which is comprised of 13 cartographic technicians, an offset photographer, and a natural resource specialist.

Also in Oregon, the Public Assistance and Records Section of the Branch of Lands and Minerals operates the Public Room and provides cartographic support to update the Public Room maps. Twenty people a day use the public room. The cartographic technicians maintain the land plats in the public room to record new actions required by new cases or information on surveys. About 30 changes are made each month and 12 new entries. It took about 2 people 8 months to note the Wilderness Areas in Washington state and they still have Oregon state to put on the plats. They calculate acreage with clinimeters to identify the lands on the maps.

The OSO Cartographic Section of the Cadastral Survey Branch develops approximately 75 survey plats a year. It takes a week to 10 days for each one. The size, terrain, and number of previous surveys which must be researched impacts this workload. They have some limited ADP support. ORCA is used to input changes and new acreage that is surveyed. A tracking system for surveys in maintained on the Wang PC which tracks the steps from request to approval of a survey. But these are all oriented more toward surveying than mapping. Some direct support does exist. For example, in conjunction with USGS, BLM has taken ORTHO photos for the western part of Oregon. BLM can scale them down to provide land measurements. They then use the coordinate values on the corners to develop GIS coordinates.

The OSO cartographers feel they could use automation to create the survey plats. They will also be required in the near future to provide geographic coordinates for GIS. This requires the ability to perform mathematical computing which is not now available to them.

They would like to prepare a map, digitize it at the same time, and generate plotter information from that data. They are getting a plotter in 1986.

In Eastern States, the Cadastral Survey Division used to do extensive mapping in ESO but lack of funding has eliminated their ability to continue doing so. They only have one draftsman now, primarily updating existing maps.

In Colorado, the Branch of Cartographic Services is divided into three Sections: Publications, which includes photosetting (in the Branch with the Branch Chief); Planimetrics Section; and the Special Projects Section. There are a total of 23 people in the Branch with most of them in Planimetrics and Special Project Section.

The Publications Department performs the full spectrum of publications services including graphic art, photo setting, cover design, composition and geographs.

The Planimetrics Section provides maps which show arbitrary and manmade characteristics of the land, such as roads and pipelines instead of the usual topigraphic relief characteristics. This section supports the land records and cadestral survey programs within CSO.

Colorado consists of 350 township title Master plats and each plat is represented by 7,000 subplats. There is a continuous process to update these and they are currently one year behind. The plats get dog eared and need maintenance and restoration. These plats are sold to the public for an annual revenue of $25,000 to BLM.

The Special Project Section is currently working on 20 projects identified in their Annual Work Plan as supporting the need for maps. Each one of these projects takes from 18 to 24 months and they would like to have more lead time. They get their information through remote sensing or by reading case files to digest the information and then depict it on the maps.

In Colorado, they feel cartography could use Computer Aided Design (CAD) particularly in minerals maps and Cadastral surveys. They still need a hardcopy because by law all Cadastral plats must be signed by a surveyor. They would also need a backup or historical copy of each version of the plat as it was developed.

In Montana, the Division of Administration is responsible for providing technical support for mapping. Here maps are used by the field personnel and the public, more than plats. There are four full-time draftsmen and six clericals to do the printing, graphing, and word processing. They are planning to put a map inventory on the Level 6. All four of the draftsmen would use this system, probably daily.

To support the cartographic services function, the BLM information systems must provide mathematical computing capability to calculate coordinates, map tracking capability to control map modifications and index the maps, and graphics capabilities.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o Operating schedule/deadlines: Any action on a tract must be represented on a map within ten days.
- o Security/privacy: Normal business standards for security would be adequate.
- o Response time: Since even electronic map production on a plotter takes a relatively long time and involves a lot of information, the user should be allowed to view the map on-line before creating a physical copy. The physical copy could be produced in batch mode.
- o Interfaces: None
- o Reliability: Normal business standards for reliability would be adequate.

Major programmatic inputs:

- o Cadastral survey field notes

- Case information on legal status and physical characteristics such as an oil well.
- Remote sensing data on physical land characteristics
- Engineering surface improvements such as dams or fences

Major programatic outputs:

- Maps

Use of existing system:

- **Number of users:** 180
- **Amount of use:** System use is daily
- **Distribution by office:** Most mapping is conducted at the district and state office level.
- **Refer to Figure C-11 for sizing information**

Growth factors: Cartographic workload is driven by cadastral survey workload and BLM case workload. The survey and resurveys identify the coordinates and characteristics of a tract of land which the cartographer must represent on a map. BLM is legally required to represent physical characteristics resulting from an action on public land, such as an oil well or right-of-way, within ten days, so the number and type of cases drives the mapping workload.

Part 4: Existing System

Name:	ORCA
Location:	Some State Offices
Hardware:	Level 6
Software:	COBOL
Telecommunications:	BLM Network

Figure C-11
Cartographic Services Sizing Information

	Total Acres Surveyed to Date	Number of Plats Accepted	
		Field Survey	Supplemental Plat
Alaska	74,729,381	228	3
Arizona	61,657,715	44	9
California	91,005,508	50	15
Colorado	62,711,552	92	9
Eastern States	548,469,937	73	--
Idaho	44,065,160	23	9
Montana	166,494,237	57	3
New Mexico	117,239,550	24	3
Nevada	50,946,185	42	6
Oregon	95,220,123	69	4
Utah	44,009,021	21	2
Wyoming	55,580,844	15	7
	1,422,129,220	738	70

Source: Public Land Statistics 1983

Name: GIS Tools and Remote Sensing

Location: Denver Service Center

Hardware: Various, mostly HP and Data General

Software: Unknown

Telecommunications: BLM Network

<<< BLM Functional Requirement >>>

Facility Construction and Maintenance

Part 1: General Information

Associated Program:	Engineering
User Organizations:	State and District Offices
Owner/Operator/Maintainer:	Denver Service Center, (D420)
Existing Automated System:	JDR, FMS, HEC 4, HEC 5, Dam Safety System

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Part 2: Description of Overall Program, Requirement, and Current Procedures

The Facility Construction and Maintenance function is performed by Engineering. The operational levels are the state and district offices with more activity in the district and resource area then the states.

In the Washington Office, the Division of Engineering Services is broken into four major areas: Geographic Information Systems, Mapping, Maintenance, and Transportation Planning. These areas are essentially self-contained with little or no information transfer between the four areas. The resource community tends to drive the workload of the Engineering Services Division. New buildings, recreational sites, and new roads or trails are the types of things that would generate additional workload for them. The Engineering Services area is currently responsible for 65,000 miles of road and 15,000 administrative buildings.

According to the Division Chief of Engineering Services, their biggest requirement is an automated facility inventory including inventory, construction, and maintenance costs of the facility. The intent of this inventory would be to aid in the replace/restore decisions for particular facility, whether it be a road or a building. Concerning current support, there currently only exists Wang support for the organization and no telecommunications associated with the Wang. The field has some automated support but it is normally resident on other agencies computers such as the Forest Service or the Bureau of Reclamation.

The Washington Office reporting requirements are relatively low. For example, Engineering Division does not contribute to the Annual Report. They are responsible for report to FEMA concerning dam safety. The Bureau of Reclamation computer in Denver is used to store the records and prepare the report. A safety official in Denver reports to the Division Director in the Washington Office on dam safety as a colateral responsibility.

Maintenance is a peripheral part of Washington Office responsibilities and since they primarily deal with policy there is very little activity in the Maintenance area. Major activity centers around the budget. Washington Office allocates some of the funding Denver Service Center (DSC) receives for engineering work and is also responsible for some contract review. He receives the BLM Engineering allotment from the BLM Budget Office, develops the allocations for the State Offices, and communicates that to the field. This is done simultaneously for at least three, and sometimes four, fiscal years including both the preliminary workplan and the annual workplan.

Since BLM has not been expanding, construction has been fairly quiet, but transportation activity has remained significant. Technical support to the field is largely provided by DSC. Washington Office primarily provides policy and guidance for such areas as pollution control and transportation controT for projects such as roads, trails, and aviation facilities. Washington Office also coordinate within BLM across divisions, with other agencies such as the Department of Agriculture or the Department of Defense, as well as with other bureaus in Interior. Approximately half of Washington Office communication is with DSC and the other half is with the State Offices directly. The only technical support in the Washington Office is Wang word processing.

The State Offices monitor the construction of buildings, recreational sites, oil wells, dams, pipelines, and land treatment such as contour furrows or re-seeding. The State Office also develops contract specifications and monitors contracts for construction work. Much of this work is contracted out. In Colorado alone, there are about 90 contracts a year. Procurement tracks them but Engineering needs to track them also because they are responsible for making sure the work is completed.

Most of the engineering is done at the district level. The state office designs solutions for some of the more complex problems and does all drafting. The real specialty work such as designing buildings and bridges is done in the Denver Service Center.

Cooperative Agreements (CA) with range operators have freed up money for new improvements by letting the operator maintain old projects. In the Judith Resource Area, for example, there are only 20 projects still left for BLM staff to maintain although they must monitor the 1500 projects which were turned over to range land operators. CAs differ from the CMAs which are Cooperative Management Agreements. CAs were developed under the Taylor Act for small improvements. Cooperative Management Agreements are similar but involve larger plots of land and larger projects. Congress is currently scrutinizing the CMAs.

State Office engineers use the Bureau of Reclamations computer for inventory and other facility management software but it does not have all the data they need such as storage characteristics, height, some engineering properties, and maintenance schedules.

BLM builds their own buildings when only BLM personnel would be housed, usually at the Resource Area level. At all higher levels, they either use GSA buildings or privately owned buildings. They also maintain facilities and range improvements. The Bureau of Reclamation system does not provide maintenance tracking capabilities.

Two opportunities for increased support within engineering would be plotting of pipelines and easements, and hydrology analysis. In Montana, they conduct approximately 30 pipelines and easements per year which can be anywhere from one mile to 25 miles in length. This entails a great deal of drafting and is very time consuming. With regard to hydrology analysis, MSO is responsible for 6,000 dams varying in size. They build approximately 100 dams a year and maintain another 10 to 15 dams a year. They probably have more dam activity than any other state. The Montana staff believe there may be DSC computer programs to help with this effort, but there is no training or support for state office staff.

The Financial Management System is used to monitor funding. It is adequate for construction, but not for maintenance cost estimates, amount of material, and so forth.

The Job Documentation Reporting System (JDRS) is supposed designed to help track individual projects and their associated tasks but it is not very useful. It does not track maintenance. Since maintenance is a large portion of their workload, this is the capability they really need. It also is tied to resource programs instead of construction work. The BLM staff feel it should be an interactive system for the District Office and the Resource Area instead of resident at DSC. To use the system, sheets are filled out in the field and mailed to DSC for data entry. Keying errors are very common. When an error is made, the whole record is re-entered.

Dam Safety System from the Bureau of Reclamation is used to assess dam safety. This information is input by forms through DSC to update Bureau of Reclamation system. The Bureau in WO then develops the dam safety reports required by law. The formal report is not used by the field. Field engineers use the system to schedule dam maintenance. Many dams are too small to fit on the Reclamation system. They are scheduled manually.

Another important function of Engineering Services in the Colorado State Office is reevaluation of potential dam sights (10,000) that effect Withdrawals. Certain tracts of land were withdrawn from public availability because they would be flooded if a proposed dam were built. Since not all of these dams have been built, some of the land no longer needs to be withdrawn. There are currently 280 Withdrawals which involve over 1 million acres. This effort is done for 5 or 6 state offices which include Montana, Utah, Wyoming, Nevada, Eastern States, and Colorado. There is a 1991 deadline to complete this effort by Congressional mandate.

These Withdrawals were set aside as early as 1898 and re-evaluation requires quite a bit of research in the libraries, historic files, and in the Environmental Impact Statements.

They are planning to download Withdrawal information from ASPEN on to Infosen, a PC package, but this has not been done yet. There are also several hydrology programs, HEC 4, HEC 5, HYDUR, RESYLD, REGFREQ, and MULTREG converted directly from the U.S. Corps of Engineers programs acquired in 1984 and 1985, and now on the Denver Service Center several others have been transferred from USGS Multics hardware. They are investigating whether the GIS MOSS software on the Data General could be used to analyze the data on Withdrawals. They would like to access the USGS WATSTORE data base on gauge information but it is hard to access. They could use data exchanges with other States too to exchange evaluation methods, legal descriptions, and graphic data representations.

The Grand Junction District Office Branch of Technical Support and Assistance provides both design and actual maintenance work on roads, buildings, dams and other structures. Although the engineering staff are provided by the District Office, the project files, about two pages each, are kept in the Resource Area office. These project files are used as checklists for milestones in the construction process. They are also used to create the Annual Work Plan at the District level. Since the District cannot access them, a district engineer goes to every specialist in the District to gather the information.

They maintain a contract project tracking data base on the DPS 8 to track people, time, costs, and modifications to contracts. There are 22 projects input at the District Office level and shared by the State Office.

The Grand Junction District in Colorado used the Job Document Reporting system (JDR) but do not anymore. Inputting the information by form was too frustrating and unreliable. One of their Resource Areas input over a thousand projects and spent a lot of time correcting them but they finally gave up.

The Judith Resource Area in Montana uses JDR to track jobs and maintenance on these jobs. Input is sent on forms to the Denver Service Center. Data entry peaks in the fall. It took 6 to 8 months to get the initial data loaded into JDR. The Judith staff feel that if they controlled their own data entry, it could be loaded in a couple of days.

To support the facility maintenance and construction function, BLM information systems should provide the ability to track project progress and maintain extended schedules; access to technical analytical software resident on outside data centers; and financial tracking capabilities to monitor project performance against budget.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o **Operating schedule/deadlines:** Annual report to FEMA on dam safety.
- o **Security/privacy:** Normal business standards for security would be sufficient.
- o **Response time:** Batch response time would be sufficient.
- o **Interfaces:** The engineers require access to outside software on the Forest Service computer in Fort Collins, the Bureau of Reclamation computer in Denver, and USGS.
- o **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

Engineering requirements are driven by program activity and local terrain. For example, more timber cutting means more road construction. Montana's geography requires more dams than other states.

Major programatic outputs:

- o Maintenance of existing facilities and structures.
- o New bridges, BLM buildings, fences, pipelines, dams, etc.

Use of existing system:

- o **Number of users:** 80-100 users
- o **Amount of use:** Periodic project oriented use for analytical tools project tracking software probably would be used at the end of each pay period.
- o **Distribution by office:** Most of the engineering work is directed out of the district office but often performed at the Resource Area level. The state office provides assistance with large or complex problems. DSC provides highly focused expertise if necessary.
- o **Refer to Figure C-12 for sizing information**

Figure C-12
Facility Construction and Maintenance

	Recreational Areas		Water Improvements/Year		
	Number	Acres	Dikes (cubic yds)	Pipelines (linear ft)	Reservoirs (cubic yds)
Washington Office	---	---	---	---	---
Denver Service Center	---	---	---	---	---
Alaska	20	510	---	---	---
Arizona	24	3,588	24,050	287,352	36,833
California	65	4,347	470	---	26,823
Colorado	24	760	6,250	52,800	22,516
Idaho	39	737	797	204,442	10,300
Montana	6	175	---	182,415	37,291
Nevada	10	78,422	---	221,886	10,889
New Mexico	6	2,520	19,570	224,160	6,975
Oregon	70	1,901	---	8,277	150,004
Utah	114	1,712	3,960	268,587	3,123
Wyoming	28	905	---	47,125	22,639
Eastern States	---	---	---	---	---
TOTAL	406	95,577	55,097	1,351,900	472,517

Source: Public Land Statistics

Growth factors: Facility maintenance is an ongoing workload which will not diminish in the near future. No expansion in facilities or facility construction is anticipated in the foreseeable future.

Part 4: Existing System

Name: Financial Management System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: COBOL

Telecommunications: BLM Network

Name: Job Documentation Reporting System

Location: DSC

Hardware: DPS-8

Software: COBOL and ASPEN/2

Telecommunications: Mail data to DSC

Name: HEC 4, HEC 5, HYDUR, RESYLD, REGFREQ, & MULTREG

Location: Denver Service Center

Hardware: DPS-8

Software: FORTRAN

Telecommunications: BLM Network

Name: Dam Safety System, Facility Management Software

Location: Bureau of Reclamation

Hardware: Unknown

Software: Unknown

Telecommunications: Mail to DSC to Reclamation

<<< BLM Functional Requirement >>>

Transportation System Construction and Maintenance

Part 1: General Information

Associated Program:	Engineering
User Organizations:	State and District Office, although District staff will operate out of Resource Areas if workload is heavy or extended in duration
Owner/Operator/Maintainer:	DSC
Existing Automated System:	FMS; JDR; RDS-Forest Service

Part 2: Description of Overall Program, Requirement, and Current Procedures

Transportation Systems Design and Construction is conducted primarily at the State Office level. Washington Office provides policy and guidance for such areas as pollution control and transportation control for projects such as roads, trails, and aviation facilities. They are also responsible for coordination within BLM across divisions, with other agencies such as the Department of Agriculture or the Department of Defense, as well as coordination with other bureaus in Interior. Approximately half of their communication is with DSC and the other half is with the State Offices directly. Technical support is provided almost exclusively by the Denver Service Center.

The State Offices monitor the construction of roads, buildings and recreational sites and also oil wells, dams, pipeline and land treatment such as contour furrows or re-seeding. The State Office also develops specifications and monitors contracts for construction work. Much of this work is currently contracted out. In the Colorado State Office, there are about 90 contracts a year. Procurement tracks these but they need to track them also.

The more basic engineering is done at the district level. The state office designs solutions for some of the more complex problems and does all drafting. The real specialty work, such as designing buildings and bridges, is done in the Denver Service Center.

The Financial Management System is adequate for construction, but not for maintenance information such as cost estimates, amount of material and so forth.

The Job Documentation Reporting System (JDR) was developed as a project tracking system but is not very useful. The field staff believe it should be an interactive system at the District Office or the Resource Office instead of resident at DSC.

Colorado maintains a contract project tracking data base on the DPS-8 at DSC. There are 22 projects input at the District Office level and shared by the State Office. This includes information on people, time, costs, and modifications to contracts.

It also does not track maintenance which is the capability they need. It also is oriented toward resource programs instead of construction work.

The Job Document Reporting system (JDR) has been used by Colorado in the past with limited success but is no longer used. The data input forms and procedures have made it too difficult to use.

The RDS system provides information on roads, such as survey information, cross section cuts, volumes, and alignments. In Colorado, they only have two or three road designs a year but this program saves them two or three work weeks each time. It takes one and a half days to write up the forms and input them to the Denver Service Center which keys them for entry into the Forest Service computer in Fort Collins. The results are used for preliminary design.

It would be more useful if it were an in-house capability. They currently build 30 to 90 days lead time into their milestones and projects plans to allow sufficient time get this information. This system is also used for pipeline design to plot profile and pressures. Since there is an increased emphasis being placed on water they see an increased use of the system for that purpose.

Montana State Office engineers use the Bureau of Reclamations computer for inventory. They also use other facility management software on the Bureau of Reclamation system but several factors they are not available on the system such as storage characteristics, height, some engineering properties, and maintenance schedules.

The engineers in Montana maintain about six thousand miles worth of roads, recreation facilities, and range improvements. The Bureau of Reclamation system does not allow them to track the maintenance of any of this. They make no attempt to track all these projects manually. Particularly with roads, it is not feasible. They are currently trying to develop a system on DSC.

To support the transportation system design and construction function, BLM information systems must provide access to technical analytical software on outside systems, timely financial reporting in sufficient detail to track project progress, and timely data entry and turnaround to allow field analysis to proceed.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Project-specific deadlines but no regular deadlines.
- **Security/privacy:** Normal business standards for security would be sufficient.
- **Response time:** Batch processing would be sufficient.
- **Interfaces:** Outside analytical software such as RDS.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Annual Work Plans for road development
- Road maintenance schedule

Major programatic outputs:

Use of existing system:

- **Number of users:** 80-100
- **Amount of use:** Periodic project-oriented use for Road Design System Project tracking system would be used after each pay period for update and reference.
- **Distribution by office:** Most activity would be at the District Office with some State Office activity.
- **Refer to Figure C-13 for sizing information**

Growth factors: The transportation system tends to expand during periods of high resource development such as timber sales or increased recreational area development.

Figure C-13
Transportation System Design and Maintenance
Sizing Information

	Miles of Road Maintained
Washington Office	---
Denver Service Center	---
Alaska	13
Arizona	4,202
California	2,594
Colorado	9,631
Idaho	5,249
Montana	11,958
Nevada	10,004
New Mexico	1,247
Oregon	27,844
Utah	5,972
Wyoming	4,758
Eastern States	---
TOTAL	83,472

Source: WO 730, Engineering Branch

Part 4: Existing System

Name:	Road Design System
Location:	Forest Service -- Fort Collins, Colorado
Hardware:	Unknown
Software:	Unknown
Telecommunications:	Mail forms to DSC

Name:	Financial Management System
Location:	Denver Service Center
Hardware:	Honeywell DPS-8/70
Software:	COBOL
Telecommunications:	BLM Network

Name:	Job Documentation Reporting System
Location:	Denver Service Center
Hardware:	DPS-8/70
Software:	ASPEN
Telecommunications:	Mail forms to DSC

<<< BLM Functional Requirement >>>

Prevent, Predict, and Fight Wildfire

Part 1: General Information

Associated Program:	Fire Management
User Organizations:	State and District Offices, Boise Interagency Fire Center
Owner/Operator/Maintainer:	BIFC and State Office Fire Managers
Existing Automated System:	BEHAVE (Forest Service); IAMS which includes ALDS, RAWS, and FUELS AFFIRM (Forest Service); Fire Reporting System, DSC

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Fire Program is unique among government programs in that the funds are spent prior to formal approval. Also, interagency agreements allow organizations to fight fires on other agencies land as well as their own. They receive reimbursement from the U.S. Treasury directly, regardless of whether it was a fire fought by Interior personnel on Agriculture land or Agriculture personnel on Interior land. Cooperation between agencies fighting fires is very close. There are five land management agencies that may be involved in a forest fire: the Forest Service, the U.S. Department of Agriculture, the Bureau of Indian Affairs, the Fish and Wildlife Service, and the Park Service.

In the Fire Management program, decisions are made at the district level. The state provides primarily a supervisory role. The Washington Office is responsible for field office evaluations of the states. Their goal is evaluation of two states per year. They also conduct biannual self-evaluations by the various state offices on how the firefighting season went for that particular year. It is conducted in a conference format.

The Washington Office has four major functional responsibilities: policy analysis, monitoring the current budget, conducting field office evaluations, and conducting self-evaluations concerning the firefighting program. The division is divided into three groups: two programs, Fire Management including the program leader and two staff, and Aviation Management including the program leader and one staff; and a technical specialist in ADP and Telecommunications. The technical specialist is a relatively new position designed to track the various automated operational systems in the field and coordinate technology usage. (The technology specialist's role is discussed more under the Telecommunications Management Functional Requirement.)

The Boise Interagency Fire Center (BIFC) is unique among the interagency fire centers in that it has no operational responsibilities; that is, it is not responsible for a geographic area. There are many other interagency fire centers, but they are all responsible for a specific geographic area. The relationship between the Division of Fire and Aviation Management and the BIFC is that of peer organizations. The Washington Office advises the Assistant Director of Technical Services concerning the budget for BIFC, but they have no supervisory responsibility for the operation of BIFC.

The Fire Management Program is also responsible for coordinating with Canadian officials. The American effort is directed by a national committee including one forestor from the east, one forestor from the west, and fire representatives from the various state offices. The Canadians have a more extensive lightning detection system, but less effective resource coordination because their resources are organized by local province rather than on a national level like the United States. Similar to interagency agreements, diplomatic notes have been exchanged between the State Department and the Canadians so that all resources can be applied to a fire without concern for reimbursement. Reimbursement is already approved.

The Fire Management Program receives funds from two sources: basic funding through line item appropriations for individual expenses at fixed amounts and emergency funds which are broken into fire and presuppression components. Presuppression funds are supplemental funds programmed to particular preventive or precautionary activities such as prescribed burning. The states operate against a known forecasted level of funding and attempt to stay within that limit. The other component, fire, is actually the firefighting portion of the emergency fund, and once again, this is also forecast, but the states are not limited by that amount and can spend whatever is necessary to control the fire.

The Fire Management Division receives daily reports during the fire season on the status of fires in various state offices. The Boise Interagency Fire Center runs the program and sends copies of the report to both BLM and the Forest Service. The reporting has been standardized. With regard to management reporting, the Washington Office receives reports on the dollar level spent, and the level of FTE versus ceiling at both the mid-year mark and the end of the year. They receive budget information from the Office of the Budget, not from the states directly. The Office of the Budget receives the information from the states. The Division of Fire and Aviation Management also provides some statistics concerning fires for inclusion in the BLM Annual Report.

Most of the changes anticipated in the Division of Fire and Aviation Management concern the fire program. There is a move from the policy that "all fire is bad" to the policy "not all fire is bad". They expect more extensive use of "perscribed burning", where underbrush is burned prior to a wild fire in a controlled manner. Also, if a fire is not likely to do a great deal of damage or is likely to do less damage than the cost of surpressing the fire, BLM will limit its activity to either not fighting the fire at all or containment of the fire.

Washington Office expects more use of ADP to predict fire, particularly, improved weather station coverage to get more specific weather data. Also, an automated dispatch system to disperse firefighting capabilities based on predictions by a computer model on where they expect fires to occur.

In the future, Washington Office expects a greatly reduced role for BLM in Alaska concerning fire management. Within the next few years, approximately half of the BLM land will be transferred to either the Park Service or the Forest Service and much of the other half will be transferred back to Alaska. Due to this, the Fire Management program in Alaska will probably be much more centralized.

Their systems are independent of other administrative systems and fairly specialized in nature. Washington Office believes the important ADP opportunities for the Fire program are more technology sharing with other agencies, better data sharing and coordination with other agencies, and standardization both with regard to procedures and also with regard to technology.

The fire program is broken down into two major areas: initial attack and project fire, and the business of fire. Initial attack and project fire has to do with suppression of fire once it has been discovered. It includes getting resources into the proper area, reporting progress of the fire and analyzing where the fire is likely to go. The business of fire has to do with predicting the fire before the actual occurrence of a fire, reporting readiness for a fire, and workload analysis. This involves strategic planninng in order to establish where the resources should be located and also prescribe the fire which is used to preempt the occurrence of a wild fire.

The fire management program is creating their own database because the GIS database is not useful to them. Three things make the GIS system inappropriate for the fire management program:

1) To suppress fires only basic data is needed. The data within GIS is too detailed for the fire management program to use.

2) Restriction data is not always available from GIS. In case of a wild fire, the firefighters need to know the restrictions they are bound by, such as endangered species in the area, historic sites that need to be protected, archaeological sites, or other areas which require special attention.

3) The orientation of the information collected by GIS is different from that of a fire management program. For example, the fire management area is concerned about the maximum deployment of resources to a fire. They are concerned about the identification of their protection responsibilities. They are concerned about road systems to move in equipment and manpower. They are also concerned about watershed sensitivities to avoid causing major floods or mudslides as an after-effect to a fire.

The fire management program plans to integrate with the GIS system to identify the restrictions they must consider during a fire. They plan to operate the IAMS system to pre-plan their reactions to a fire and some of the fire business software on the Boise computer. The Denver Service Center will continue to provide general administrative systems support.

There are three areas that are likely to benefit from additional ADP support: Project Fire, Strategic Planning, and Prescribing the Fire. Project Fire consists of three components: communciations, cache, and logistics. Each of these areas requires ADP support. Communications is important not only for the administration of the fire, but also for the people actually involved with fighting the fire. Cache systems are required to determine equipment levels and provide adequate support for Project Fire. Third, logistics require ADP support to coordinate the dispatch of materiel to regional and local fire units as well as national coordination.

Strategic Planning needs to integrate all information available from the RMP's. There is a plan currently, but it needs to be more closely tied to cost benefit analysis. This is not currently possible due to the level of ADP support. They are working with the state offices to develop a new plan and determine the economic analysis which would be appropriate. This could be incorporated into a central system that would be available for all of the state offices. There are existing Forest Service models to help identify the resources and requirements of such a program.

Prescribing the Fire, the third area, requires certain design parameters to assure that a set fire remains under control. This system would use the same fuel projections and weather data from RAWS as fighting an actual wild fire. However, it is important to model the fire first. This determines the initial attack required and identifies the risks associated with prescribed burning.

The information currently received from GIS is inappropriate. It is much finer than the data that they need. They require bigger cells for quicker response time. The model must also be able to adjust to real life lightning and weather.

The Washington Office staff suggested the communications area offers opportunity for cost savings. Ground communications is very costly and cumbersome. Often, they must create a communication network prior to fighting a fire. It wastes precious time and requires building physical facilities. Satellite or microwave communictions would be easier and less costly.

Also, regulatory changes due to divestiture make it reasonable to consider their own PBX's for local communication. Their expert on high-technology coordination saw a bright future for satellite communications, not only for heavy data transmission, but also possibly as radio repeaters in support of local fire teams. This kind of communication would require extremely highly reliable communication means, but satellite communications in the future could reach the acceptable level of reliability.

The State Offices are responsible for two daily situation reports and would like to have direct data entry for this function. They maintain fire incident reports on an ASPEN application at DSC. This system has 5,000 records currently, with 500 added annually. The Data Generals used for fire equipment and supplies were a one-time purchase from Congress. Funds are not as readily available now.

The initial attack and project fire area is supported by the Initial Attack Management System (IAMS). The system is comprised of three components: the LDS or Lightning Detection System, the Remote Auto Weather System or RAWS, and the Fuel System (FUELS) which conducts fuel analysis. The IAMS system is not complete. It is approximately 33% complete and should be completed by 1988. IAMS is run on a Data General Machine. This is used to dispatch people and equipment to fight large fires which require over a 100 people to fight. Dispatchers in the field have software to access airplane and warehouse information.

During the fire season, the Data General displays 24 hours a day a map of lightening strikes based on the lightening detection system, a remote access weather reports. The reports from the RAWS are communicated through repeator stations. The system indicates where lightening has struck. It avoids aimless airplane patrols to detect fires. This has saved a lot of air patrol resources.

Knowledge of the lightening strike patterns has also allowed BLM to preposition people and material where the patterns are occurring and save time.

BEHAVE is a fire modeling system that BLM is just beginning to use.

The Colorado State Office monitors the daily situation of fires throughout Colorado, using IAMS support 3 to 4 times a day.

The Forest Service also has information on a data base in Cleveland called AFFIRMS (Automated Fire Fighters Information Retrieval System) which is supplied by a private contractor. This is a twenty-year history of weather, fuel, and moisture content conditions. It is useful for predictive modeling. The Colorado State Office accesses the Forest Service's AFFIRM several times a day for seven months a year to monitor forecasts.

Another Forest Service program, called LCA (Least Cost Analysis), would provide more background on the economics on when to fight a fire and when to let it burn.

The fire program staff would like an automated logistics program to order equipment, manpower and aircraft such as the Forest Service system; on-line edits for data input to the BIFC System on Fire Reports (equipment size, location, staff and fire behavior currently input through field cards, 60% of which return to the State Office for data edits and electronic mail to be able to communicate with the District Offices, the Park Service and the Forest Service.

To support the fire program, the BLM information systems must provide access to weather and fire predictive software, such as IAMS, BEHAVE, and AFFIRM; provide inventory information on fire stores and other resource availability; and provide reliable communications between fire teams and their base.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The business of fire is preparatory and analytical in nature and has no schedule or urgency. Initial attack and project fire are operating on real-time terms with very short time frames.
- **Security/privacy:** Normal business standards for security would be sufficient.
- **Response time:** For the business of fire, batch processing would be sufficient. For project fire, on-line 3-5 second response time.
- **Interfaces:** BLM uses a lot of Forest Service software on the Fort Collins system.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Resource Management Plans to identify protection responsibilities.
- Reports from other land agencies on fires.
- Reports of lightening strike patterns.

Major programatic outputs:

- Firefighting reports.
- Control of wild fires.

Use of existing system:

- **Number of users:** The number of users would vary substantially both by season and by system type. The business of fire and fire response planning system would have a fairly stable user population of 70 to 80 percent. The initial attack systems are very seasonal so the number of users would flucuate from zero to eighty based on time of year and weather conditions.
- **Amount of use:** Use of the initial attack systems would be very seasonal. The business of fire and fire response planning system.

- **Distribution by office:** All operational activity is at the district level with State Offices providing supervision and oversight.
- **Refer to Figure C-14 for sizing information**

Growth factors: The firefighting program is "expandable" so that whatever funds are necessary to fight the fire are available but two factors will drive the size of the effort in the near future: more application of technology and a change in BLM firefighting philosophy.

More application of technology to firefighting will allow BLM and other land agencies to deploy their fire detection and firefighting resources more effectively. Fire will be detected more quickly and firefighting material brought to bear more quickly.

BLM has also changed their firefighting philosophy from "all fire is bad" to "not all fire is bad." They will fight a fire only if the cost will be lower than the cost of potential fire damage. They also set or "prescribe" fires to burn off accumulating fuel before it can generate a huge fire. These tactics reduce the resources required to fight fire on the public lands.

New technology has made these tactics practical. BLM can now predict with some level of condifence how a fire will behave. This allows them to decide how to fight it. Before they could not take a chance.

Part 4: Existing System

Name:	Initial Attack Management System (IAMS) (includes ALDS, RAWS, and FUELS)
Location:	Boise Interagency Fire Center
Hardware:	Data General
Software:	Unknown
Telecommunications:	BLM Network

Figure C-14
Prevent, Predict, and Fight Wildfire Sizing Information

	Number of Fires	Acres Burned	Dollar Damage (in thousands)
Washington Office	---	---	---
Denver Service Center	---	---	---
Alaska	116	1,873	$ 41.6
Arizona	141	10,001	188.2
California	126	15,397	1088.2
Colorado	166	10,992	55.2
Idaho	204	183,187	2143.0
Montana	62	9,884	159.6
Nevada	293	47,185	3104.7
New Mexico	19	384	8.4
Oregon	201	198,113	5159.9
Utah	166	339,481	4956.5
Wyoming	72	1,537	57.4
Eastern States	---	---	---
TOTAL	1,566	818,034	16962.7

Source: Public Land Statistics 1983

Name: Fire Reporting System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: ASPEN

Telecommunications: BLM Network

Name: AFFIRM

Location: Forest Service, Cleveland

Hardware: Unknown

Software: Unknown

Telecommunications: Dial-up

<<< BLM Functional Requirement >>>

Coordinate Aviation Requirements

Part 1: General Information

Associated Program: Fire and Aviation Management

User Organizations: State and District Offices

Owner/Operator/Maintainer: State Office Aviation Managers

Existing Automated System: OAS Reporting System - Reclamation

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Part 2: Description of Overall Program, Requirement, and Current Procedures

The Aviation Management Program is a relatively new program started about two years ago to coordinate the usage of aircraft within BLM, not only for fighting fires, but also for other uses such as spraying, herding horses and burros, and transportation of BLM personnel. All aircraft used by BLM are either contract or rented. They own no aircraft.

The Washington Office provides guidance to the State Office concerning policy on aircraft usage, monitors safety performance, and provides guidance on accident prevention. Operational activities can occur at both the State and District level depending on the nature of the need. Each State Office has one person assigned specifically to Aviation Management. Some States also have aviation managers designated at the District level.

The Aviation Program is responsible for providing the Department of Interiors' Office of Aircraft Services the consolidated BLM requirements for aircraft. The Aviation Program is also responsible for monitoring the "special services" contracts, such as air spray application, aerial photography, or aerial horse control. The day to day contracts are handled by the contracting offices within the State Office.

Sixty percent of BLM's aviation requirements are in support of fire BLM-wide. It is also used for cadastral surveying, checking water quality and taking inventory of bald eagles.

There are two types of preplanned contracts: the Permanent Guarantee Contract, and the Call-When-Needed Contract. The Permanent Guarantee Contracts provide the level of service anticipated by BLM. The Call-When-Needed contracts provide additional aircraft in the event of emergency requirements.

To support the aviation coordination function, the BLM information systems must provide contract tracking capability and an inventory of aircraft available and their characteristics.

The Division of Aviation, or Aviation Program, would like to help local managers to select the appropriate aircraft for their use. Since BLM spends approximately 40 million dollars on aircraft rental and contract, using the cheapest aircraft appropriate for the particular job could provide significant savings. Currently, the managers who select the aircraft are unaware of which aircraft would be most applicable for the job and the aircraft available other than the one they selected.

The State controls the contracts for all flights used both for transportation and for land use management. They analyze the cost and benefits of aviation versus other approaches. Montana has aviation coordinators at both state office and district office level due the the high level of aircraft use. The state office handles the paperwork for managing the aircraft and act as the COR's for the airline contracts. They also inventory airports for their suitability to handle certain aircraft, particularly some of the heavier aircraft use for fire fighting.

The Office Aircraft Service (OAS) has a reporting system on the Bureau of Reclamation. The states enter about 23 data elements on at the State Offices but the data is not used by the State Offices. The Office Aircraft Service pays the contractor bills but the States have no way to verify that these costs were accurate.

The Colorado State office had a Rex system at DSC on air flight data to analyze data and print out costs for fixed wing and rotary aircraft. Colorado spends up to a million dollars per year on rotary aircraft which are more expensive than conventional fixed wing aircraft. The files were lost when the Rex system was changed to the Aspen system

Five separate services, including BLM, all charter aircraft independently although they are often co-located and often traveling places at approximately the same time. If this chartering could somehow be coordinated they would save a tremendous amount of money. Also, a reservation and scheduling system would help them use aircraft more efficiently by scheduling flights for more than one BLM team at a time. No one checks to see if trips could be consolidated on one plane.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** BLM is Responsible for annually providing OAS with a projection of BLM aircraft requirements for the years. BLM reports monthly on aircraft usage.
- **Security/privacy:** Normal business standards for security would be sufficient.
- **Response time:** Batch response time would be sufficient.
- **Interfaces:** Data transfer with the Office of Aviation Services, DOI would be useful in the future. No interfaces required at this point.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Requests for aircraft services

Major programmatic outputs:

- Contract coordination
- Aviation usage and safety reports

Use of existing system:

- **Number of users:** 12-15
- **Amount of use:** Monthly data entry
- **Distribution by office:** Data entry is performed by the State Office.

Growth factors: Sixty percent of BLM aircraft services are related to the firefighting program. As that program expands or contracts, so do aircraft requirements.

Part 4: Existing System

Name: Office of Aircraft Services, DOI-Aircraft Usage Reporting System

Location: Bureau of Reclamation

Hardware: Unknown

Software: Unknown

Telecommunications: Mail in completed forms

<<< BLM Functional Requirement >>>

Equal Employment Opportunity Compliance Reporting

Part 1: General Information

Associated Program:	Equal Employment Opportunity
User Organizations:	Washington Office and State Office EEO Officers
Owner/Operator/Maintainer:	Denver Service Center - Finance and PAY/PERS
Existing Automated System:	Financial Management System; PAY/PERS

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Office of Equal Employment Opportunity is responsible for BLM compliance with civil rights regulations and monitoring BLM's Affirmative Action Plan for compliance with federal regulations.

The EEO Office is broken into two work teams, as opposed to branches: Affirmative Action, which is responsible for program development and evaluation, and Conflict Management, which is responsible for handling all complaint adjudication and investigation.

The EEO Officers in the field have line responsibility to the State Office Associate Directors, but they have dotted line responsibility to the Washington Office. The EEO office in Washington has direct delegation of authority from the BLM Director.

The State Offices each have EEO Officers who have direct reporting responsibilities to the State Office directors and dotted line responsibilities to the EEO chief.

EEO coordinator in each District Office perform EEO functions as a collateral duty and are not full-time. The State EEO officer is responsible for three annual reports: Report on Affirmative Action, Federal Equal Opportunity Recruitment Plan (a five-year plan), and a report on State Office EEO complaints. These are each compiled manually.

Part 4: Existing System

Name: Office of Aircraft Services, DOI-Aircraft Usage Reporting System

Location: Bureau of Reclamation

Hardware: Unknown

Software: Unknown

Telecommunications: Mail in completed forms

<<< BLM Functional Requirement >>>

Equal Employment Opportunity
Compliance Reporting

Part 1: General Information

Associated Program: Equal Employment Opportunity

User Organizations: Washington Office and State Office EEO Officers

Owner/Operator/Maintainer: Denver Service Center - Finance and PAY/PERS

Existing Automated System: Financial Management System; PAY/PERS

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Office of Equal Employment Opportunity is responsible for BLM compliance with civil rights regulations and monitoring BLM's Affirmative Action Plan for compliance with federal regulations.

The EEO Office is broken into two work teams, as opposed to branches: Affirmative Action, which is responsible for program development and evaluation, and Conflict Management, which is responsible for handling all complaint adjudication and investigation.

The EEO Officers in the field have line responsibility to the State Office Associate Directors, but they have dotted line responsibility to the Washington Office. The EEO office in Washington has direct delegation of authority from the BLM Director.

The State Offices each have EEO Officers who have direct reporting responsibilities to the State Office directors and dotted line responsibilities to the EEO chief.

EEO coordinator in each District Office perform EEO functions as a collateral duty and are not full-time. The State EEO officer is responsible for three annual reports: Report on Affirmative Action, Federal Equal Opportunity Recruitment Plan (a five-year plan), and a report on State Office EEO complaints. These are each compiled manually.

State EEO officers also manually monitor all hires, applicants, and recruiting activity. They meet occasionally, but rarely. They have had an EEO conference twice in six years. It is hard to compare notes when they meet so infrequently.

For each program, there are three areas of functionality: planning, budget monitoring, and recruitment. The greatest need is in recruitment. Recruiting is expensive and the emphasis of current hiring patterns is internal hiring. This requires more coordination of resources within BLM and with other federal agencies to identify internal personnel who could be used to satisfy EEO requirements, and share data on external recruits who do not meet the needs of the bureau recruiting them but may meet another agency's need.

The primary weakness of the function is the inability of BLM to forecast employment over the next four to five years. Although most BLM programs do not feel the need to project five years into the future, EEO feels it is necessary to forecast employment for BLM to be in compliance with affirmative action directives and civil rights regulations. BLM must be able to demonstrate active pursuit of minorities in the workplace. If they cannot predict their employment opportunities for students, they have a difficult time using pinpoint recruiting techniques, such as persuading educators to direct students toward BLM. This prevents BLM from demonstrating the positive action necessary to fend off class action suits. The fundamental statistical analysis required to measure whether they are in compliance with regulations cannot be done routinely with current systems, and are compiled manually.

BLM must consider the overall composition of their workforce from many perspectives to stay in compliance, not just minorities and women. BLM staff, GS-12 through GS-15, is generally over 40 years of age so they could be subject to age discrimination at this point. Personnel forecasting would help them avoid some of the bad personnel investments they have made in the past and avoid getting themselves into situations where they must make unattractive decisions.

EEO is currently supported by the PAY/PERS System, run by Reclamation, and the Financial Management System. In EEO's opinion, PAY/PERS does not provide sufficient detail on hiring patterns and personnel movement both within BLM and out of BLM. This may improve with version AA of PAY/PERS installed in 1/86, which maintains historic data. Although PAY/PERS can provide the number of minorities hired or leaving, EEO requires additional information such as why minorities have left; how many dollars were spent recruiting minorities; how much training was provided to minorities; and the demographics of the population from which hiring was conducted. The population within BLM is not representative of the national population. BLM tends to be more concentrated in the west. The EEO Compliance Reporting team must be able to illustrate with supporting documentation how their employment population matches up with the minority population and explain the absence of minorities. They must also illustrate efforts to attract minorities.

The EEO Office in Washington Office does not have on-line access to PAY/PERS so they often request DSC staff to run queries for them on PAY/PERS. The PAY/PERS data does not always arrive in the timeframe they need so they often develop their own data from historical records and request the information from PAY/PERS at the same time. If the PAY/PERS data arrives in time, they cross-check the two sets of figures against each other.

The Washington Office staff indicated they could possibly use the terminal in Personnel to get access to PAY/PERS but they do not have training in PAY/PERS or user documentation for PAY/PERS even if terminal access were made available.

The EEO staff need statistical analysis and business graphics capability to apply to personnel demographics. Much of their job is convincing managers that there is a problem. The volume of data which must be analyzed requires statistical analysis to develop correlations and graphics to illustrate them. This is currently done by hand or not at all.

The EEO Office uses the Financial Management System to allocate EEO funds annually and to control the monthly budget. FMS also provides data on training expenditures. However, the training account in FMS does not distinguish between training given and training received, so it is difficult to assess the amount BLM spends on giving training to minorities. Also, FMS cannot identify the dollars spent to settle EEO complaints. The EEO Office cannot assess how much money EEO complaints are actually costing BLM.

To support EEO activities, the States receive a printout from DSC out of PAY/PERS each month on all minorities by grade, sex, and ethnic background, listed alphabetically. They would prefer a list by series and grade since that is one of the comparisons they must analyze. They also receives monthly microfiche reports out of Denver with employment statistics for their individual State and the other State Offices but they are difficult to use.

The States feel they need an easier way to compile workforce statistics and statistics in a more usable form than the microfiche. They could use simple graphics or plotting capability to illustrate how their State is doing versus the rest of BLM and also other individual State Offices. EEO's top ADP priority is a personnel hiring forecasting system, preferably with some capability for sensitivity analysis.

To support the EEO compliance reporting function, BLM information systems must provide capability to access personnel demographic information easily, ad hoc reporting capability to aggregate the population using different conditions for aggregation, statistical software to identify trends and measure significance of observations; and simple graphics to illustrate results. PAY/PERS will most likely provide most of the base data and may provide some or all of the required capability.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o Operating schedule/deadlines: Monthly reporting to Department of Interior on BLM EEO progress

- **Security/privacy:** Must have security adequate for sensitive personnel data.
- **Response time:** Usually monthly processing is adequate. More timely response may be required for conflict resolution or court defense.
- **Interfaces:** Need the ability to feed financial and personnel information into statistical software for multi-variant analysis, trend analysis, and ad hoc BLM staff to general population ratios.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Financial management reports on EEO spending
- Personnel reports on personnel actions
- Reports from the State Offices on recruiting activities

Major programmatic outputs:

- Allocation of EEO funds to the State and District level
- Reports to Department of Interior on BLM EEO activity

Use of existing system:

- **Number of users:** 60-70
- **Amount of use:** Monthly, State EEO officers collect FMS and PAY/PERS reports to develop statistics.
- **Distribution by office:** The users comprise EEO staff in Washington Office; EEO officers in the State Offices; and EEO district responsibilities assigned as collateral duty.
- **Refer to Figure C-15 for sizing information.**

Growth factors: As other organizations develop more sophisticated information systems concerning their personnel, the level of effort an organization must illustrate to prove compliance with EEO regulations also increases. BLM can anticipate an increase in their reporting requirements.

The political climate in Washington has diminished the emphasis on EEO activities but the potential for class-action suits has not diminished. BLM must be able to convincingly illustrate that the demographics of their workforce conform to local demographics and they are actively attempting to attract minorities.

Figure C-15
Report EEO Compliance Sizing Information

	Number of BLM Staff
Washington Office	461
Denver Service Center	529
Alaska	819
Arizona	400
BIFC	150
California	613
Colorado	684
Idaho	451
Montana	572
Nevada	509
New Mexico	730
Oregon	1,474
Utah	555
Wyoming	723
Eastern States	214
TOTAL	8,884

Source: WO-830 Employment Branch. Does not include political appointees or executive service.

Part 4: Existing System

Name: Financial Management System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: COBOL

Telecommunications: BLM Network

Name: PAY/PERS

Location: Bureau of Reclamation, through Denver Service Center

Hardware: CDC - Cyber

Software: COBOL

Telecommunications: BLM Network

<<< BLM Functional Requirement >>>

Equal Employment Opportunity
Conflict Resolution

Part 1: General Information

Associated Program: Equal Employment Opportunity

User Organizations: Washington Office and State Office EEO Officers

Owner/Operator/Maintainer: Denver Service Center - Finance and PAY/PERS

Existing Automated System: Financial Management System; PAY/PERS

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Office of Equal Employment Opportunity is responsible for BLM compliance with civil rights regulations and monitoring BLM's Affirmative Action Plan for compliance with federal regulations.

The EEO Office is organized into two work teams, as opposed to branches: Affirmative Action, which is responsible for program development and evaluation, and Conflict Management, which is responsible for handling all complaint adjudication and investigation. The Conflict Management work team is primarily responsible for trying to resolve conflicts and minimize the damage to BLM of existing situations.

The Conflicts Management work team is also responsible for training State Office management on conflicts and law management. Between four and six State Offices are trained each year as part of EEO's annual workplan.

The EEO Officers in the field have line responsibility to the State Office Associate Directors, but they have dotted line responsibility to the Washington Office. The EEO office in Washington has direct delegation of authority from the BLM Director.

The State Offices each have EEO Officers who have direct reporting responsibilities to the State Office directors and dotted line responsibilities to the EEO chief.

The EEO coordinator in each District Office performs both Affirmative Action and conflict management functions as collateral duty, not full-time. The State EEO Office is responsible for three annual reports: Report on Affirmative Action, Federal Equal Opportunity Recruitment Plan (a five-year plan), and a report on EEO complaints. These are each compiled manually. The States also manually monitor all hires, applicants, and recruiting activity. Some of these data may be available through PAY/PERS but the EEO staff in the States are not very familiar with the system and PAY/PERS is not an easy system to use for people unfamiliar with it.

The EEO Office in Washington feels the primary weakness of the function is the inability of BLM to forecast employment over the next four to five years. As with EEO compliance reporting, BLM must be able to demonstrate active pursuit of minorities in the workplace to protect itself from EEO complaints. If BLM cannot predict their employment opportunities for students, pinpoint recruiting techniques, such as persuading educators to direct students toward BLM, are not possible and reduce BLM's ability to illustrate positive effort to comply and fend off class action suits.

There is potentially a high dollar risk for not providing this kind of information. Courts have also awarded legal fees, promotions, and other forced actions in addition to backpay. For example, in a suit for U.S. Steel, the courts awarded 40.5 million dollars to a group of women who had been discriminated against. Pending laws may allow for double back pay in certain situations. It is not necessary for BLM to match the population's demographics. They must explain why their demographics are different from the general population, and show active effort to provide minority opportunities. These opportunities represent a significant investment on the part of BLM. EEO generally deals with grades GS-12 through GS-15 which tend to be well paid.

The EEO Conflict Resolution team are currently supported by FMS and by the PAY/PERS System, run by Reclamation. FMS provides data on funds used to improve minority employment opportunities. PAY/PERS is used to provide personnel demographics data.

In the opinion of the EEO Office, PAY/PERS does not provide sufficient detail on hiring patterns and personnel movement both within BLM and out of BLM. Although PAY/PERS can supply information on minority hiring and the number of minorities leaving, additional detail is required by EEO such as: why minorities have left; how many dollars were spent recruiting minorities; and the demographics of the population from which hiring was conducted. To defend against an EEO complaint at BLM, high level national statistics are inadequate because the aggregate population within BLM is not representative of the national population, BLM tends to be more concentrated in the West. BLM should be able to provide additional detail to illustrate how their employment population matches up with the local minority populations and also illustrate BLM efforts to attract minorities. The costs defining and maintaining such information would have to be compared to the benefits obtained, however.

Capabilities that Washington Office would like to see that are not available through PAY/PERS are multiple regression statistical analysis and commercial graphics. Much of the EEO Conflict Resolution team's job is convincing the courts that BLM has taken reasonable and earnest efforts to resolve any problem. The volume of data which must be analyzed to accomplish this requires statistical analysis to develop correlations and graphics to illustrate them.

EEO State Office staff feel they need the ability to track active efforts by BLM in response to EEO complaints. They need a complaints history file to illustrate positive movement and defend themselves.

To support the EEO conflict resolution function, BLM information systems must provide capability to access personnel demographic information easily, ad hoc reporting capability to aggregate the population using different conditions for aggregation, conflict tracking, statistical software to identify trends and measure significance of observations; and simple graphics to illustrate results. PAY/PERS will most likely provide most of the base data and may provide some or all of the required capability.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Monthly reporting to Department of Interior on BLM EEO progress
- **Security/privacy:** Must have security adequate for sensitive personnel data.
- **Response time:** Usually monthly processing is adequate. More timely response may be required for conflict resolution or court defense.
- **Interfaces:** Need the ability to feed financial and personnel information into statistical software for multi-variant analysis, trend analysis, and ad hoc BLM staff to general population ratios.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Financial management reports on EEO spending
- Personnel reports on personnel actions
- Reports from the State Offices on recruiting activities

Major programmatic outputs:

- Resolution of EEO conflicts, including supporting material indicating active effort by BLM to comply with EEO.
- Reports to Department of Interior on BLM EEO activity

Use of existing system:

- o Number of users: 60-70
- o Amount of use: Monthly collect FMS and PAY/PERS reports to develop statistics.
- o Distribution by office: Users are composed of EEO staff in Washington Office; EEO officers in the State Offices; and EEO district responsibilities assigned as collateral duty.
- o Refer to Figure C-16 for sizing information

Growth factors: As other organizations develop more sophisticated information systems concerning their personnel, the level of effort an organization must illustrate to prove compliance with EEO regulations also increases. BLM can anticipate an increase in their reporting requirements.

The political climate in Washington has diminished the emphasis on EEO activities but the potential for class-action suits has not diminished. BLM must be able to convincingly illustrate that the demographics of their workforce conform to local demographics and they are actively attempting to attract minorities.

Figure C-16
EEO Conflict Resolution

	Five Year Average Number of EEO Complaints	
	Formal	Informal
Washington Office	3	34
Denver Service Center	1	2
Alaska	3	9
Arizona	4	10
BIFC	0	0
California	1	5
Colorado	1	9
Idaho	1	10
Montana	1	1
Nevada	2	8
New Mexico	3	3
Oregon	1	11
Utah	1	3
Wyoming	3	10
Eastern States	3	3
TOTAL	28	118

Source: WO 120, Office of Equal Employment Opportunity

Part 4: Existing System

Name: Financial Management System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: COBOL

Telecommunications: BLM Network

Name: PAY/PERS

Location: Bureau of Reclamation, through Denver Service Center

Hardware: CDC - Cyber

Software: COBOL

Telecommunications: BLM Network

<<< BLM Functional Requirement >>>

Budget Development

Part 1: General Information

Associated Program:	Budget
User Organizations:	Washington Office, Denver Service Center, State and District Offices
Owner/Operator/Maintainer:	Office of the Budget (WO-160) and DSC
Existing Automated System:	Financial Management System; Workload by Objective (WBO) Matrix; MBO

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Office of the Budget is responsible to the Bureau Director for all matters relating to the development, presentation, and execution of the BLM budget and for bureau-wide fund control. These functions are assigned between the two branches as listed below.

The Office of Budget is divided into two branches: Operations and Budget Development. The Branch of Operations sets budget targets and monitors actual expenditures against the budget. Also, at the sixth month mark of the fiscal year, they conduct mid-year reviews and make adjustments within the budget.

The Budget Development Branch is responsible for developing the budgets for the next three fiscal years. They use the Workload by Objective (WBO) on the DPS-8 in DSC throughout BLM for budget development. This was developed by Ron Fellews from Nex Mexico who was formerly in the Washington Office budget organization. The Washington Office can access this matrix but cannot write on it. The Development Branch receives State Office budget projections using the WBO Matrix transmitted directly to their PCs. They use the PCs to massage the numbers and develop the budgets. The budget development branch has a relatively smoother workload.

Budget Development has also been using the MBO system on DSC and recently assumed responsibility for it. It is essentially an issues and key dates system. They enter bureau-wide and Washington office data, retrieve information, keep the specifications up-to-date, and initiate system changes. Technical support is provided by the Denver Service Center.

Since they have only had system responsibility for two months, they have little experience with how training should be conducted or support given. They will probably go to the State Offices and some District Offices to conduct training.

Superbrain PCs are used by Washington Office for WBO matrix, DBase, and Supercalc. The data usually arrives in a usable form, however, it may not be that reliable or particularly timely.

Information analysis and display using trend analysis and graphic illustration would be very useful.

Due to huge bureau-wide initiatives, such as ALMRS and GIS, it is difficult to get funding for improving their systems. They don't need "Starwars" technology, only simple applications. They need things that clearly support their mission and can be expanded over time.

The State Offices provide budget support by developing the outrange plan, which is a two year projection; and a five year plan. They also evaluate management issues in the District Offices and coordinate these with the State Office.

The budget allocation within the States differs by program. The budget for Colorado is appropriated to subactivities in oil and gas but appropriated to land as a line item not as subactivity. Some States give cost targets to the Resource Areas but Colorado does not. They want to maintain the flexibiliy to shift funds between cost centers.

The Level-6 is used in some States to input data elements on cost. These are transmitted to the DPS-8 to update the Financial Management System. The State Budget analysts receive the monthly reports printed at the State Office but they only use the summary sheets.

To support the budget development function, the BLM information systems must provide spreadsheet manipulation capability and the ability to share completed spreadsheets with Washington Office.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Budget development is a continuous, iterative process.
- **Security/privacy:** Data must be tamper resistant; some components, such as projected revenues from Indian Lands, are confidential.

- **Response time:** Reporting is on a regular cycle with no ad hoc queries indicated. Reports are currently received by mail. Overnight response would be adequate.
- **Interfaces:** None.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- State five-year plans
- Two-year outyear projections
- Other field expenditures and revenues
- Projected revenues
- Program objectives

Major programatic outputs:

- Outyear budgets for BLM for next three years
- State plans

Use of existing system:

- **Number of users:** 10-20 for both MBO and WBO Matrix
- **Amount of use:** Budget Development -- daily
- **Distribution by office:** Budget development activities are conducted down to the state office level.
- **Refer to Figure C-17 for sizing information**

Growth factors: No anticipated growth in workload.

Figure C-17
Budget Development
Allocations to the States
(in thousands)

	FY 84	FY 85
Washington Office	$ 59,328.9	$ 66,852
Denver Service Center	20,843.7	22,303
Alaska	36,553.4	38,085
Arizona	15,473.5	15,844
BIFC	2,116.0	1,918
California	23,657.7	26,280
Colorado	24,791.4	23,774
Idaho	16,051.2	16,704
Montana	20,685.5	20,773
Nevada	20,971.7	23,421
New Mexico	26,834.6	26,131
Oregon	19,762.0	20,448
Phoenix Training Center	1,743.0	1,208
Utah	20,193.1	21,287
Wyoming	26,889.0	29,511
Eastern States	7,230.8	7,698
TOTAL	$ 343,125.5	$ 362,237

Source: WO-160, Branch of Budget Operations

Part 4: **Existing System**

Name: Management by Objectives System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: ASPEN/2

Telecommunications: BLM Network

Name: Workload by Objectives (WBO) Matrix

Location: Denver Service Center

Hardware: DPS-8/70 accessed using Superbrain Micro

Software: WBO Matrix

Telecommunications: BLM Network

<<< BLM Functional Requirement >>>

Budget Operations

Part 1: General Information

Associated Program:	Budget
User Organizations:	Washington Office, Denver Service Center, State and District Offices
Owner/Operator/Maintainer:	Office of the Budget (WO-160) and DSC
Existing Automated System:	Financial Management System; Workload By Objective (WBO) Matrix; Manpower Correlation System

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Part 2: Description of Overall Program, Requirement, and Current Procedures

The Office of the Budget is responsible to the Bureau Director for all matters relating to the development, presentation, and execution of the BLM budget and for bureau-wide fund control. These functions are assigned between two branches: Budget Development and Budget Operations.

The Branch of Operations takes the annual workplans developed by the states and massaged by Budget Development and monitor actual expenditures versus operating budget, once appropriations by Congress have been made and the passback process is complete. At the sixth month mark of the fiscal year, they conduct mid-year reviews and make adjustments within the budget.

Washington Office Budget Operations are the system owner for the Operating Budget subsystem of the Financial Management System. They develop the targets used in the "Comprehensive Report" which reports BLM's expenditures versus operating budget. They also maintain the subactivity codes and object classes associated with FMS.

The operational budget workload peaks with the end of every quarter, but more so at the mid-year mark and the end of the year. The Budget Development Branch has a smoother workload.

The State Office Budget Analysts are primarily responsible for the Operating Budget, not Budget Development. All of the work they do is on DSC through the Level 6. The States receive most of their reports on microfiche. They use the WBO Matrix software on DSC to communicate the Annual Work Plan to the Washington Office and to receive Cost Targets from the Washington Office. This matrix is 48 columns by 52 rows. The States also input Annual Work Plan data into the system. In Montana, the Information Systems Branch does the data entry for them.

The sequence of communication goes as follows. The State Office sends a Proposed Annual Work Plan (PAWP) consisting of 8 columns of information to the Washington Office; the Washington Office responds with what they think the State Office should have using WBO Matrix; the State Office then sends to the Washington Office a request for additional funds (RFAF) to incorporate the cuts or adjustments they have been asked to make; and finally, the Washington Office sends back down to the State Offices the Approved Annual Work Plan (AAWP).

The budget charges are gathered at the Resource Area level but the budget is usually done at the District Office and above.

In Oregon, the District Office performs budgetary review, develops the annual work plan, and manages administrative function such as vehicle maintenance, purchasing, training, volunteers, and public relations.

Washington Office uses the Workload by Objective (WBO) Matrix to develop cost target controls and to communicate data from the State Offices to the Washington Office. WBO Matrix was developed by Ron Fellews from New Mexico who was in the Washington Office budget shop at one point. The Washington Office can access this matrix but cannot write on it. Washington Office Budget Operations also uses the Financial Management System. The recent redesign of FMS is a great improvement over the past system. Documentation is still sparse, but they are working to improve that. Most of the FMS reports are mailed occasionally using Federal Express. Sometimes the microfiched reports are delayed. FMS has been trying to provide remote printing capability, but that has not been working very well.

Washington Office has tried a new technique to load FMS data into WBO Matrix. They have sent select FMS columns to the WBO Matrix directly during the last mid-year adjustment period. It seemed to work pretty well. Possible areas for improvement would be improved Superbrain applications and a reduction of the diversity in the equipment currently being used.

Due to huge bureau-wide ADP initiatives, such as ALMRS and GIS, it is difficult to get funding for system improvements requirements. They do not need "Starwars" technology, mostly simple applications. They need things that clearly support their mission and can be bought in pieces. They think the emphasis should be on compatibility and avoid specialized application software.

Budget Officers also use DSC for informal communications to the Washington Office via E-mail, usually once a week, but sometimes two or three times a week during the budget cycle. The Montana office uses a Wang PC for spreadsheet analysis, projections, and some "what if" analysis. They also do some out-year budgeting using the WBO Matrix.

It would be easier to handle the reports on 8 1/2 by 11 inch paper rather than on computer paper. It seems simple, but it takes a tremendous amount of time to reduce all those pages.

Timeliness of the FMS data is a problem for the state budget analysts. Some feel that FMS did not really live up to the expectations of the redesign project. They feel they were promised a lot of downstream capability that simply never materialized.

Some of the district offices track the Operating Budget for internal use. The Grand Junction District office in Colorado uses an ASPEN data base of Manpower Correlation information. The front-end command file was written by the District Office computer specialist. The Manpower Correlation System takes FMS data down to the Resource Area level. It gives work month use against work month planned and units planned.

FMS is only accessed by the state office. The districts get reports on microfiche and only data on their district.

Financial Management System (FMS) has to be controlled by the State Office because of printout volume. Wyoming requested a Resource Area budget that resulted in a "five foot stack" of FMS printout. In Oregon, it took six hours to print a report out on a high speed printer for information on 10 districts.

In Colorado, all the District Offices can bring up the same matrix on the DPS 8 and fill in their portion. In Oregon, WBO Matrix is on the Level 6. Budget data is transmitted from the District Office to the State Office. There it is consolidated and sent on to the Washington Office.

To support the Budget Operations process, the BLM information systems must provide prompt, reliable communication with the field offices of cost targets and adjustments; tools accessable by the field level offices to manipulate data to develop AWPs; and access to FMS data to track actual versus budget.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** There are monthly status reports of actual versus budget as well as a mid-year budget adjustment. Budget development is a continuous, iterative process.
- **Security/privacy:** Data must be tamper resistant also some components, such as projected revenues from Indian Lands, are confidential.
- **Response time:** Reporting is on a regular cycle with no ad hoc queries indicated. Reports are currently received by mail. Overnight response would be adequate.

- **Interfaces:** Must interface WBO Matrix, which is used to develop and manipulate budget figures, with the FMS system, which collects actual expenditures and compares them to budget.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Annual Work Plans
- Timesheets
- Other field expenditures and revenues
- Projected revenues

Major programmatic outputs:

- Comprehensive Report of budget versus actual
- Operating Budget and budget targets
- Mid-year budget adjustments
- Outyear budgets for next three years

Use of existing system:

- **Number of users:** 60-70 for both FMS and WBO Matrix
- **Amount of use:** Monthly
- **Distribution by office:** Budget operations and development activities are conducted down to the District Office level.
- **Refer to Figure C-** 18 **for sizing information**

Growth factors: No anticipated growth in workload.

Figure C-18
Budget Operations
Allocations to the State Offices
(in thousands)

	FY 84	FY 85
Washington Office	$ 59,328.9	$ 66,852
Denver Service Center	20,843.7	22,303
Alaska	36,553.4	38,085
Arizona	15,473.5	15,844
BIFC	2,116.0	1,918
California	23,657.7	26,280
Colorado	24,791.4	23,774
Idaho	16,051.2	16,704
Montana	20,685.5	20,773
Nevada	20,971.7	23,421
New Mexico	26,834.6	26,131
Oregon	19,762.0	20,448
Phoenix Training Center	1,743.0	1,208
Utah	20,193.1	21,287
Wyoming	26,889.0	29,511
Eastern States	7,230.8	7,698
TOTAL	$ 343,125.5	$ 362,237

Source: WO-160, Branch of Budget Operations

Part 4: Existing System

Name: Financial Management System

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: COBOL

Telecommunications: BLM Network

Name: Workload By Objectives (WBO) Matrix

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: WBO Matrix

Telecommunications: BLM Network

Name: Manpower Correlation System

Location: Colorado

Hardware: Honeywell Level 6

Software: ASPEN/2

Telecommunications: BLM Network

<<< BLM Functional Requirement >>>

External Liaison Queries

Part 1: General Information

Associated Program:	Congressional Affairs; Public Affairs; and Legislation and Regulatory Management
User Organizations:	Washington Office and State Offices
Owner/Operator/Maintainer:	Washington Office
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

The External Liaison organizations within BLM, Office of Congressional Affairs, Office of Public Affairs, and Office of Legislation and Regulatory Management, are responsible for maintaining or improving relationships with the external organizations which have major impact on BLM: the Executive Branch, Congress, the General Public, and private organizations. Although their specific audiences are different, their basic information needs are very similar. One of these needs is the ability to answer questions

The audience and role of each external liaison organization is different and will be discussed individually.

The Office of Congressional Affairs

The Office of Congressional Affairs is the liaison between members of Congress and the Hill, and BLM. They interact with whatever area of BLM is appropriate to get the information they need. Congressional Affairs is also responsible for supporting all local advisory boards overseeing BLM operations as well as the Public Land Advisory Council, a national advisory body, and all controlled mail within the Bureau of Land Management.

Congressional Affairs is separate from Legislation and Regulation Management, unlike the other DOI bureaus which combine them. Legislation and Regulation is more concerned with the written law and impending written law than facilitating communication with Congress.

Most are raised issues at the district level and are very difficult to predict. By the time they reach Congressional Affairs, they are already very sensitive issues. This causes their workload to be uneven but high pressure. The information they need is normally short and very specific in nature. For example, they often answer a question with one phone call. They feel ADP is unlikely to help with these problems. If the field personnel had better access to information to the questions, it would indirectly help them. However, there is no need for their own systems.

Congressional Affairs is split into three functions: Controlled Mail, Congressional Liaison, and Committee Management.

Controlled Mail sifts through the BLM mail and selects those which have control dates or should have control dates. They are responsible for making sure that BLM responds within the time parameters specified within the mail. If mail requires timely response but does not specify a precise time, they impose a time parameter.

The Controlled Mail function has one full-time staff member that handles approximately 30 to 40 new pieces of mail per week. They handle all the control mail for BLM, not just congressional mail. He uses control tickets, logs the pieces of mail, and assigns due dates. He is also responsible for following-up on individual calls. If there is no due date assigned to a letter, or other piece of mail, a due date of eight working dates is assumed. There appears to be more mail when Congress is in session, which is not particularly surprising. He has no ADP support of any kind. He services both the DOI building and also the Premier building. He receives informal help from the people in the Premier building. They hand carry mail over to the Premier building for him whenever they are in the DOI building. Controlled mail records are kept for approximately seven years. A telecopier machine is available to him in Public Affairs if he needs to rapidly transmit something to the field. He has not used it very often.

Congressional Liaison is responsible for direct communications with members of Congress, setting up briefings to keep them informed of BLM's position on particular issues, and, in general, assuring that communication between the Congress and BLM is unobstructed.

This function has to do with relationships on the Hill with members of BLM. It is staffed with two laisions, and two supporting secretaries. The secretaries also provide some support to the advisory council function. The congressional laision is responsible for receiving phone calls and logging them. The volume of these calls can vary from one to twenty a day. They usually attempt to resolve them the same day.

They also act as a conduit for the distribution of some reports, particularly the more sensitive reports such as the Payment In Lieu of Taxes (PILT) payment reports. These reports specify how much money the Federal government will be paying to particular states in lieu of taxes that would normally be paid on the land if it were owned by the State rather than Federal government. Naturally, the congressmen for those particular states are very interested in the level of payments. These payments are determined partly as a function of population of the state, along with other geographic and demographic information.

The Committee Management function is responsible for assisting the 94 advisory boards that oversee BLM activities, mostly at the district level. The kind of advice given would be: clarifying committee responsibilities, advising on new laws and regulations, and helping with charter renewal activities every two years. Fifty-two of the advisory committees are district advisory committees. Thirty-nine are grazing advisory boards. There is one Federal State Coal Advisory Board, one Iditarod National Historic Trail Advisory Council, and the California Desert Conservation Advisory Committee. The only committee he is not responsible for is the National Public Land Advisory Council. This is such a sensitive council that it is given one staff member almost full time, as essentially, an executive secretary. Therefore, the advisory board function can be interpreted as having one and a half staff dedicated to it.

All of these committees have charters which expire by law every two years. It is the responsibility of the committee management officer to maintain those sections of the departmental manual applying to advisory committees, develop the charters for these committees, help local officials identify possible nominees and solicit nominations, maintain membership lists for each of the committees, review the activities of the committees to assess compliance with governing laws and directives, maintain complete records on all BLM advisory committees, including: copies of applicable laws, regulations, executive orders, appointment letters, etc., and prepare BLM's portion of the Annual Report on Federal Advisory Committees submitted to Congress. A full description of the officers' duties is attached to this report as an exhibit provided by the current officer.

There are two kinds of committees: discretionary and statutory. A discretionary committee is created "at the discretion of the Secretary" and therefore must justify its existence. If its charter lapses, it must be rejustified before the charter can be reestablished. A statutory committee is required by law. Its charter may also lapse in two years, but there is no need to justify reestablishing the committee. Assigning new members is sufficient to reactivate it. Of the ninety-four committees currently in session, ninety-two are statutory committees. The committee officer provides quarterly and annual reports on Advisory Committee Membership to the General Services Administration. These are combined with similar reports from other organizations to be part of the President's Report on Advisory Committees submitted to Congress in compliance with the Federal Advisory Committee Act.

The primary support required by the committee membership officer is word processing support. He feels he has little or no need for ADP.

The National Public Lands Advisory Council is handled separately from the other advisory committees. This committee is served by a Congressional laision. She acts as an executive secretary for the National Public Lands Advisory Board. It consumes a minimum of 20 to 30% of her time. It is one of the two secretarial discretionary committees established, and the only true national advisory committee. She spends her time getting information for the committee directly from program officers, and providing analysis on legislation and regulation to members of the committee. She sets up briefings with members of the committee and BLM staff and tries to facilitate communication between BLM and the committee. She is responsible for the minutes of the committee and also for following up on any resolution[illegible]us fifteen to twenty resolutions per meeting. She also feels no particular for ADP support in this area.

Office of Public Affairs

The mission of the Office of Public Affairs is to keep both the publi the field personnel of BLM informed on the issues of interest to the pu They are organized into two branches. The first branch, Resource Informa is comprised Public Affairs specialists and speech writers. They compos communications coming out of Public Affairs. This includes such thing news releases, publications, speeches by BLM officials or other gover officials, and video tapes or films.

This branch maintains the facsimile capability. They acquired it whe mailroom was disbanned and contracted out. They use it for newspaper art or other non-word processing type of documents. However, not all the offices are compatible with the current facsimile equipment they use. creates a problem communicating with the field.

Another responsibility of theirs is public input analysis training. a new program designed to help field officers analyze public input in va forms such as: comments on EIS statements. They are trying to provide direction to the public affairs function and trying to show BLM in a favorable light, both internally and externally. They also want to sensitivities within BLM towards the timing of raising issues or is policies and the position of congressional supporters physical[illegible] example, it would be unwise for them to issue a new policy for the positi an issue when one of their key supporters is home visiting his constiuent has not been previously briefed on the new policy or position.

The second branch is Publications and Communication Services. It i smaller branch and produces the work that Resource Information has together. They arrange for photographs, artwork, typesetting, and videot of any communications Resource Information wants to publish. Although are responsible for the publications, the publication inventory is kept i Denver Service Center.

In addition to the Washington office staff, there is at least full-time public affairs officer in each state office, also sometimes t three other full-time personnel. Each district has one public affairs of assigned who reports directly to the state officers. Hiring of any P Affairs officer must be approved by the Washington Office. Also, publications over $2,000.00 requires Washington office approval.

Public Affairs prepares the Federal Land Policy Management Act repor they cannot incorporate the Public Land Statistics into the FLPMA report. data is not accurate and there is superfluous data in addition to the required for the report. The biggest inconsistency is in the number of that they manage.

Washington Office Public Affairs sees more pressure to be lean and more efficient in the future. There will be more requirements for good communications both within BLM and outside. The field offices must have better access to word processing and more reliable telecommunications system than Dial-Com.

The Public Affairs Office in the State Offices performs a similar role as the Congressional Affairs Office in Washington Office only for state officials. They facilitate the spread of information both ways: educating state officials and the public about BLM and also educating BLM branch chiefs on the issues of public concern. They also serve as interagency liaisons for BLM at the State Office level. In Eastern States Office, this includes interaction with the Eastern Lands and Resources Council.

The most common function for the public affairs officer is to answer questions. In ESO, the subject matter can be divided up as follows: the Wild Horse and Burro program (50%), Minerals (40%), and Lands (10%). In the Minerals area, the job of ESO's Public Affairs staff is particularly critical because state officials tend to be predisposed against BLM. This is partly BLM's own fault because they have essentially ignored state officials in the past and painted a very insensitive image. It is also in part due to ignorance on the part of state officials concerning who BLM is and what they do. In response to this, BLM has begun to place more emphasis on improving state relations and in general interacting more with the outside at the State Office level.

The States are currently frustrated with their inability to get reliable answers to their questions, through their other branches or from DSC data through their ADP group. For example, Eastern States is often asked statistical questions concerning the status of land or the size of programs, particularly with regard to minerals related easements, since BLM's primary charge in the East is mineral and subsurface rights. However the information they have is not accurate. They need access to either data and sotware to develop their own statistics or an ADP staff member who can quickly develop the information for them. They need someone to ask ad-hoc questions. The information could be fairly old so long as it is accurate. "As of last week", for example, would be adequate.

The Office of Legislation and Regulatory Management

The Office of Legislation and Regulatory Management is responsible for representing the bureau of land managements official position with regard to bills being introduced or considered as well as regulations that should be inacted in order to enforce whatever laws have been passed. There is no corresponding organization to Legislative and Regulatory Management at any level other than the Washington office.

They are organized into two major areas: Legislation and Regulation. The Legislation area is staffed primarily with lawyers and responsible for reviewing bills which have been introduced and reporting on those bills to the departments legislative council. They prepare statements and briefing books for witnesses to congress. They prepare signing or veto statements for the President. And they prepare briefings for before and after the bill has been introduced. They also provide drafting services for members of congress and for BLM introduced legislation. They coordinate views within BLM or with other agencies.

The Regulatory area is responsible for developing the regulations to enforce a law after it has been passed. This area is staffed primarily with professionals who are ex-programmatic staff. They get together with current programmatic staff and prepare either a notice of intent to regulate, or propose regulations. They write both the regulations and the preamble. They are responsible for reviewing comments and categorizing them. They also have a technical function of making sure these regulations receive the proper clearances, flow smoothly through the OMB organization, and are distributed to the proper parties. They are also responsible for coordinating dispered views within BLM or with other agencies. As part of this, they review the regulations of other organizations which may be applicable, such as, EPA, FEMA, PS, FS, and FNWS.

For the Legislative and Regulatory Management office the highest priority is the ability to get quick, accurate answers. These answers can be provided over the telephone if necessary, however, the field personnel must have the information available to them. Currently this is not the case. The day to day need will sometimes be BLM aggregates and sometimes State Office specific information.

As part of this requirement, they also need a better capability to send reports back and forth. Currently, they have a three or four day lag time or maybe a week. The reports tend to be fairly short, just a few pages, since current transmission is by mail.

They have no need to retrieve other current regulations because they did not attempt to pattern current regulations on past regulations. Past regulations have been written in very archaic language and they are trying to eliminate that language and make the law read in more every day language.

They anticipate no major impacts on current workload. Current changes under consideration, such as a land interchange agreement, will merely change their jurisdiction, but not really their function. The only area which may provide a little different activity is in the grazing area. Some of the grazing provisions of the law will be expiring in the near future and will need to be replaced. However, they do not expect that to be a major impact on the organization.

Summary

To support the external liaison query function, BLM information systems must provide reliable communications to the field offices to at least the District Office level for voice, data, and document transmission; ad hoc query capability, by external liaison staff or field staff responding to liaison queries; and statistical and computation capability to develop supporting material to answer questions.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Each of these organizations are reacting to short deadlines, often as short as the same day.
- **Security/privacy:** Although they are external liaisons to facilitate communication, it is likely they will also be handling information which should not be public knowledge so security will be important.
- **Response time:** Response time requirements will depend on the situation. Although some requests will require 'same day' responses, for most overnight response would be sufficient.
- **Interfaces:** Need reliable document transmission capability from the field.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Requests for information.
- Field reports of incidents or pending issues
- Proposed legislation
- Congressional committee meetings
- Advisory committee meetings
- Controlled mail

Major programatic outputs:

- Direct communications with Congress and the Executive branch
- Advise for establishing and operating the advisory boards
- Briefings, speeches, public statements, press releases, and expert witness testimony
- Expedite key report distribution
- FLPMA Report to Congress
- Answer public queries

- o Prepare signing or veto statements for the President
- o Draft legislation or prepare positions on legislation
- o Prepare regulations for enforcing legislation

Use of existing system:

- o **Number of users:** For Congressional Affairs, five potential users.

  For Public Affairs, 70-80 potential users.

  For Legislation and Regulatory Affairs, the number of users would vary by the nature of the workload. Approximately five users.

- o **Amount of use:** Daily

- o **Distribution by office:** Users are located in Washington Office for Congressional Affairs and Legislation and Regulatory Management, although the responses oculd be generated at any level in BLM; and at the Washington State and District Offices for Public Affairs.

Growth factors: BLM would like to improve their internal and external image. This will require increased emphasis on being responsive to the external groups and being more proactive and less reactive but not necessarily an increase in staff to do so. This means more efficient use of staff to answer questions effectively. ADP can be used to generate the answers more quickly although the external liaisons themselves do not necessarily need access to it themselves. They need access to a point of contact who has system access.

Part 4: Existing System

Not Applicable

<<< BLM Functional Requirements >>>

External Liaison
Document/Material Preparation

Part 1: General Information

Associated Program:	Congressional Affairs; Public Affairs; and Legislation and Regulatory Management
User Organizations:	Washington Office and State Offices
Owner/Operator/Maintainer:	Washington Office
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

The External Liaison organizations within BLM, Office of Congressional Affairs, Office of Public Affairs, and Office of Legislation and Regulatory Management, are responsible for maintaining or improving relationships with the external organizations which have major impact on BLM: the Executive Branch, Congress, the General Public, and private organizations. Although their specific audiences are different, their basic information needs are very similar. One of these needs is the ability to produce documents and other materials for external consumption.

The audience and role of each external liaison organization is different and will be discussed individually.

The Office of Congressional Affairs

The Office of Congressional Affairs is the liaison between members of Congress and the Hill, and BLM. They interact with whatever area of BLM is appropriate to get the information they need. Congressional Affairs is also responsible for supporting all local advisory boards overseeing BLM operations as well as the Public Land Advisory Council, a national advisory body, and all controlled mail within the Bureau of Land Management.

Congressional Affairs is separate from Legislation and Regulation Management, unlike the other DOI bureaus which combine them. Legislation and Regulation is more concerned with the written law and impending written law than facilitating communication with Congress.

Most are raised issues at the District level and are very difficult to predict. By the time these issues reach Congressional Affairs, they are already very sensitive. This causes their workload to be uneven but high pressure. The information they need is normally short and very specific in nature. For example, they often answer a question with one phone call. They feel ADP is unlikely to help with these problems. If the field personnel had better access to information to the questions, it would indirectly help them. However, they feel there is no need for their own systems.

Congressional Affairs is split into three functions: Controlled Mail, Congressional Liaison, and Committee Management.

Controlled Mail sifts through the BLM mail and selects those which have control dates or should have control dates. They are responsible for making sure that BLM responds within the time parameters specified within the mail. If mail requires timely response but does not specify a precise time, they impose a time parameter.

The Controlled Mail function has one full-time staff member that handles approximately 30 to 40 new pieces of mail per week. They handle all the control mail for BLM, not just congressional mail. He uses control tickets, logs the pieces of mail, and assigns due dates. He is also responsible for following-up on individual calls. If there is no due date assigned to a letter, or other piece of mail, a due date of eight working dates is assumed. There appears to be more mail when Congress is in session, which is not particularly surprising. He has no ADP support of any kind. He services both the DOI building and also the Premier building. He receives informal help from the people in the Premier building. They hand carry mail over to the Premier building for him whenever they are in the DOI building. Controlled mail records are kept for approximately seven years. A telecopier machine is available to him in Public Affairs if he needs to rapidly transmit something to the field. He has not used it very often.

Congressional Liaison is responsible for direct communications with members of Congress, setting up briefings to keep them informed of BLM's position on particular issues, and, in general, assuring that communication between the Congress and BLM is unobstructed.

This function has to do with relationships on the Hill with members of BLM. It is staffed with two laisions, and two supporting secretaries. The secretaries also provide some support to the advisory council function. The congressional laision is responsible for receiving phone calls and logging them. The volume of these calls can vary from one to twenty a day. They usually attempt to resolve them the same day.

They also act as a conduit for the distribution of some reports, particularly the more sensitive reports such as the Payment In Lieu of Taxes (PILT) payment reports. These reports specify how much money the Federal government will be paying to particular states in lieu of taxes that would normally be paid on the land if it were owned by the State rather than Federal government. Naturally, the congressmen for those particular states are very interested in the level of payments. These payments are determined partly as a function of population of the state, along with other geographic and demographic information.

The Committee Management function is responsible for assisting the 94 advisory boards that oversee BLM activities, mostly at the district level. The kind of advice given would be: clarifying committee responsibilities, advising on new laws and regulations, and helping with charter renewal activities every two years. Fifty-two of the advisory committees are district advisory committees. Thirty-nine are grazing advisory boards. There is one Federal State Coal Advisory Board, one Iditarod National Historic Trail Advisory Council, and the California Desert Conservation Advisory Committee. The only committee he is not responsible for is the National Public Land Advisory Council. This is such a sensitive council that it is given one staff member almost full time, as essentially, an executive secretary. Therefore, the advisory board function can be interpreted as having one and a half staff dedicated to it.

All of these committees have charters which expire by law every two years. It is the responsibility of the committee management officer to maintain those sections of the departmental manual applying to advisory committees, develop the charters for these committees, help local officials identify possible nominees and solicit nominations, maintain membership lists for each of the committees, review the activities of the committees to assess compliance with governing laws and directives, maintain complete records on all BLM advisory committees, including: copies of applicable laws, regulations, executive orders, appointment letters, etc., and prepare BLM's portion of the Annual Report on Federal Advisory Committees submitted to Congress. A full description of the officers' duties is attached to this report as an exhibit provided by the current officer.

There are two kinds of committees: discretionary and statutory. A discretionary committee is created "at the discretion of the Secretary" and therefore must justify its existence. If its charter lapses, it must be rejustified before the charter can be reestablished. A statutory committee is required by law. Its charter may also lapse in two years, but there is no need to justify reestablishing the committee. Assigning new members is sufficient to reactivate it. Of the ninety-four committees currently in session, ninety-two are statutory committees. The committee officer provides quarterly and annual reports on Advisory Committee Membership to the General Services Administration. These are combined with similar reports from other organizations to be part of the President's Report on Advisory Committees submitted to Congress in compliance with the Federal Advisory Committee Act.

The primary support required by the committee membership officer is word processing support. He feels he has little or no need for ADP.

The National Public Lands Advisory Council is handled separately from the other advisory committees. This committee is served by a Congressional laision. She acts as an executive secretary for the National Public Lands Advisory Board. It consumes a minimum of 20 to 30% of her time. It is one of the two secretarial discretionary committees established, and the only true national advisory committee. She spends her time getting information for the committee directly from program officers, and providing analysis on legislation and regulation to members of the committee. She sets up briefings with members of the committee and BLM staff and tries to facilitate communication between BLM and the committee. She is responsible for the minutes of the committee and also for following up on any resolutions; usually fifteen to twenty resolutions per meeting. She also feels no particular need for ADP support in this area.

Office of Public Affairs

The mission of the Office of Public Affairs is to keep both the public and the field personnel of BLM informed on the issues of interest to the public. They are organized into two branches. The first branch, Resource Information, is comprised Public Affairs specialists and speech writers. They compose all communications coming out of Public Affairs. This includes such things as: news releases, publications, speeches by BLM officials or other government officials, and video tapes or films.

This branch maintains the facsimile capability. They acquired it when the mailroom was disbanned and contracted out. They use it for newspaper articles or other non-word processing type of documents. However, not all the state offices are compatible with the current facsimile equipment they use. This creates a problem communicating with the field.

Another responsibility of theirs is public input analysis training. It is a new program designed to help field officers analyze public input in various forms such as: comments on EIS statements. They are trying to provide more direction to the public affairs function and trying to show BLM in a more favorable light, both internally and externally. They also want to raise sensitivities within BLM towards the timing of raising issues or issuing policies and the position of congressional supporters physically. For example, it would be unwise for them to issue a new policy for the position on an issue when one of their key supporters is home visiting his constuents and has not been previously briefed on the new policy or position.

The second branch is Publications and Communication Services. It is the smaller branch and produces the work that Resource Information has put together. They arrange for photographs, artwork, typesetting, and videotaping of any communications Resource Information wants to publish. Although they are responsible for the publications, the publication inventory is kept in the Denver Service Center.

In addition to the Washington Office staff, there is at least one full-time public Affairs Officer in each State Office, also sometimes two or three other full-time personnel. Each district has one Public Affairs officer assigned who reports directly to the state officers. Hiring of any Public Affairs officer must be approved by the Washington Office. Also, any publications over $2,000.00 requires Washington Office approval.

Public Affairs prepares the Federal Land Policy Management Act report but they cannot incorporate the Public Land Statistics into the FLPMA report. The data is not accurate and there is superfluous data in addition to the data required for the report. The biggest inconsistency is in the number of acres that they manage.

Washington Office Public Affairs sees more pressure to be lean and more efficient in the future. There will be more requirements for good communications both within BLM and outside. The field offices must have better access to word processing and more reliable telecommunications system than Dial-Com.

The Public Affairs Office in the State Offices performs a similar role as the Congressional Affairs Office in Washington Office only for state officials. They facilitate the spread of information both ways: educating state officials and the public about BLM and also educating BLM branch chiefs on the issues of public concern. They also serve as interagency liaisons for BLM at the State Office level. In Eastern States Office, this includes interaction with the Eastern Lands and Resources Council.

The most common function for the public affairs officer is to answer questions. In ESO, the subject matter can be divided up as follows: the Wild Horse and Burro program (50%), Minerals (40%), and Lands (10%). In the Minerals area, the job of ESO's Public Affairs staff is particularly critical because state officials tend to be predisposed against BLM. This is partly BLM's own fault because they have essentially ignored state officials in the past and painted a very insensitive image. It is also in part due to ignorance on the part of state officials concerning who BLM is and what they do. In response to this, BLM has begun to place more emphasis on improving state relations and in general interacting more with the outside at the State Office level.

They are currently frustrated with their inability to get reliable answers to their questions, through their other branches or from DSC data through their ADP group. For example, Eastern States is often asked statistical questions concerning the status of land or the size of programs, particularly with regard to minerals related easements, since BLM's primary charge in the East is mineral and subsurface rights. However the information they have is not accurate. They need access to either data and sotware to develop their own statistics or an ADP staff member who can quickly develop the information for them. They need someone to ask ad-hoc questions. The information could be fairly old so long as it is accurate. "As of last week", for example, would be adequate.

The Office of Legislation and Regulatory Management

The Office of Legislation and Regulatory Management is responsible for representing the bureau of land managements official position with regard to bills being introduced or considered as well as regulations that should be inacted in order to enforce whatever laws have been passed. There is no corresponding organization to Legislative and Regulatory Management at any level other than the Washington office.

They are organized into two major areas: Legislation and Regulation. The Legislation area is staffed primarily with lawyers and responsible for reviewing bills which have been introduced and reporting on those bills to the departments legislative council. They prepare statements and briefing books for witnesses to congress. They prepare signing or veto statements for the President. And they prepare briefings for before and after the bill has been introduced. They also provide drafting services for members of congress and for BLM introduced legislation. They coordinate views within BLM or with other agencies.

The Regulatory area is responsible for developing the regulations to enforce a law after it has been passed. This area is staffed primarily with professionals who are ex-programmatic staff. They get together with current programmatic staff and prepare either a notice of intent to regulate, or propose regulations. They write both the regulations and the preamble. They are responsible for reviewing comments and categorizing them. They also have a technical function of making sure these regulations receive the proper clearances, flow smoothly through the OMB organization, and are distributed to the proper parties. They are also responsible for coordinating dispered views within BLM or with other agencies. As part of this, they review the regulations of other organizations which may be applicable, such as, EPA, FEMA, PS, FS, and FNWS.

For the Legislative and Regulatory Management office the highest priority is the ability to get quick, accurate answers. These answers can be provided over the telephone if necessary, however, the field personnel must have the information available to them. Currently this is not the case. The day to day need will sometimes be BLM aggregates and sometimes State Office specific information.

As part of this requirement, they also need a better capability to send reports back and forth. Currently, they have a three or four day lag time or maybe a week. The reports tend to be fairly short, just a few pages, since current transmission is by mail.

They have no need to retrieve other current regulations because they did not attempt to pattern current regulations on past regulations. Past regulations have been written in very archaic language. They are trying to eliminate that language and make the law read in more every day language.

They anticipate no major impacts on current workload. Current changes under consideration, such as a land interchange agreement, will merely change their jurisdiction, but not really their function. The only area which may provide a little different activity is in the grazing area. Some of the grazing provisions of the law will be expiring in the near future and will need to be replaced. However, they do not expect that to be a major impact on the organization.

Summary

To support the external liaison document/material production function, BLM information systems must provide reliable data and document transmission between Washington Office and the field offices to at least the District level; data manipulation for statistical and spreadsheet analysis; simple graphics for data illustration; and the ability to incorporate numeric data into textual materials.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Each of these organizations are reacting to short deadlines, often as short as the same day.
- **Security/privacy:** Although they are external liaisons to facilitate communication, it is likely they will also be handling information which should not be public knowledge so security will be important.
- **Response time:** Response time requirements will depend on the situation. Although some requests will require 'same day' responses, for most overnight response would be sufficient.
- **Interfaces:** Need reliable document transmission capability from the field.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- Requests for information.
- Field reports of incidents or pending issues
- Proposed legislation
- Congressional committee meetings
- Advisory committee meetings
- Controlled mail

Major programatic outputs:

- Direct communications with Congress and the Executive branch
- Advise for establishing and operating the advisory boards
- Briefings, speeches, public statements, press releases, and expert witness testimony
- Expedite key report distribution
- FLPMA Report to Congress
- Answer public queries

- Prepare signing or veto statements for the President
- Draft legislation or prepare positions on legislation
- Prepare regulations for enforcing legislation

Use of existing system:

- **Number of users:** For Congressional Affairs, five potential users.

  For Public Affairs, 70-80 potential users.

  For Legislation and Regulatory Affairs, the number of users would vary by the nature of the workload. Approximately five users.

- **Amount of use:** Daily
- **Distribution by office:** Users are located in the Washington Office for Congressional Affairs and Legislation and Regulatory Management, although the responses could be generated at any level in BLM; and in the Washington State and District Offices for Public Affairs.

Growth factors: BLM would like to improve their internal and external image. This will require increased emphasis on being responsive to the external groups and being more proactive and less reactive but not necessarily an increase in staff to do so. This means more efficient use of staff to answer questions effectively. ADP can be used to generate the answers more quickly although the external liaisons themselves do not necessarily need access to it themselves. They need access to a point of contact who has system access.

Part 4: Existing System

Not Applicable

Appendix D
Bureau-wide Functional Requirements
and Required Characteristics

Immediately following are descriptions of the BLM-wide functional requirements we have identified. These descriptions include a description of the function as it is performed now, the current performance and sizing requirements, and finally the details of supporting systems.

These functional requirement descriptions are based on interviews with BLM staff and BLM internal documentation. These listings do not necessarily imply that these functions should be automated. Rather they are an attempt to accurately describe the BLM-wide functions and their level of automated support.

Appendix D

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Bureau-wide Functional Requirements and Required Characteristics

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<<< BLM-Wide Functional Requirement >>>
<<< and Required Characteristics >>>

Public Land Statistics

Part 1: General Information

Associated Program:	All operational programs and some technical support programs such as fire fighting and cadastral survey.
User Organizations:	Outside organizations and external liaison groups within BLM
Owner/Operator/Maintainer:	Division of Records Systems (D-240) in DSC compiles the statistics.
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

The Public Land Statistics are a compilation of the operational activities of BLM in the form of relavent statistics, usually compiled by state, showing the level of activity (and sometimes expenditures) in each area. It is provided as a public service more than anything else because the data used in the report is often too old to be reliable and sometimes inconsistent from year to year. The Public Affairs Office in Washington does not use PLS for their annual Federal Land Policy Management Act report to Congress due to these inconsistencies and also due to additional data provided in the PLS which would be inappropriate to include in the FLPMA report.

The State Office Records Management Staffs are responsible for providing DSC with the data they compile into the end product. DSC is also a convenient location to compile the statistics because the centralized ADP systems for BLM are on the DSC Honeywell DPS-8/70 mainframe so any data captured by these systems should be accessible.

The Public Affairs Office in Washington would like to see the process improved and automated so that the statistics are more reliable or eliminated entirely. The PLS cannot usually be used by their staff to answer questions because the data is so old. If the public wants accurate data, they usually call PA directly. Although the PLS is often quoted by outside reports, the actual usage of the publication by the public is not known.

To support this functional requirement, the BLM information systems must provide the capability to capture summary activity statistics from the field and provide the ability to aggregate or manipulate them further as well as graphics capability for illustrative purposes. The systems should also provide interfaces to document production equipment such as type setting for quick production without manual intervention. PLS should use the same base of data as the FLPMA report.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o **Operating schedule/deadlines:** The Public Land Statistics are generated once a year. BLM would like to publish as close to the end of fiscal year activity as practical.
- o **Security/privacy:** Normal business standards for security would be sufficient.
- o **Response time:** No stringent response time requirements.
- o **Interfaces:** PLS should use the same base of information as the annual FLPMA report to provide consistent reporting to the public. Also, interfaces to document production equipment such as type-setting equipment, would be useful.
- o **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- o State Offices supply summary details on annual activity.

Major programatic outputs:

- o Annual Public Land Statistics publication

Use of existing system: N/A

<<< BLM-Wide Functional Requirement >>>
<<< and Required Characteristics >>>

Data Entry

Part 1: General Information

Associated Program:	All operational programs and most administrative and technical services.
User Organizations:	Data is entered by State and District Offices, Large Resource Areas, and DSC.
Owner/Operator/Maintainer:	Most data resides at DSC or the State Offices.
Existing Automated System:	N/A

Part 2: Description of Overall Program, Requirement, and Current Procedures

Data entry is performed extensively thorugh out BLM, mostly at the Denver Service Center and the State and District Offices although some Resource Areas do their own data entry, too. Field personnel expressed frustration at their inability to easily enter data in a timely manner.

Data entry is inhibited by a number of factors:

o Reliance on the mail service for communication of data entry forms and error reports extends the elapsed time for each error cycle. The mail system adds at least five elapsed days for each cycle of errors. Since some systems, such as PAY/PERS, only catch one error per cycle, one record can take several weeks to be entered. For the JDR system, one resource area spent six to eight months loading their job descriptions, primarily due to reloading miskeyed records and mail lag time.

o Inconsistencies and incompatabilities among BLM equipment at the field offices require knowledge of multiple keyboard layouts and different data entry techniques. The terminals in the field have different degrees of functionality and widely varying keyboard layouts. For example, some support the ASPEN/2 full-screen editting capability and some do not. To avoid problems, data entry staff tend to avoid functions not available on all the equipment so some of the more sophisticated capabilities of the ADP facilities are underused.

- o Field staff feel their telecommunications capabilities are unreliable. Field staff have difficulty getting into the State Office and DSC computers due to port contention. Also, some field staff reported losing data during transmission to DSC.

- o Data entry staff are unfamiliar with the software. Field staff in some state offices were aware of data entry capabilities that others unfamiliar with. Also, some staff were entering data without any training in the software.

- o Data entry is separated from the staff knowledgable in the data. This prevents any 'reasonableness' checks on the data which could be used to speed data entry if the data entry clerk and the user were colocated or if the user entered data himself. This is particularly important for technical support software where specific expertise is required to interpret the data and results.

- o Some of the software is not designed for easy data entry and changes are made to data entry software without notice to the field. For example, JDR requires significant data reentry. For JDR, an incorrect record must be rekeyed entirely. This provides opportunity for miskeying of data that what correct before.

- o Duplicate data entry is required for some systems. Some data is regularly entered separately into more than system. For example, some travel vouchers are entered into both the FMS Perpetual Inventory Subsystem and the FMS Travel Advances Subsystem.

These factors make data entry more difficult and discourage users from using the system.

To support the data entry function, the BLM information systems should provide software designed to minimize data entry requirements, capture data electronically as close to the source as possible, provide a common user interface so that data entry from system to system follows similar rules, provide reliable, easy to use telecommunications capabilities, transmit error reports to field staff where ever practical, and provide automated data sharing between applications rather than data reentry.

Part 3: Sizing and Performance Requirements

Performance requirements:

- o Operating schedule/deadlines: Data entry timeframe equirements vary widely depending on the application but error notification should be made as quickly as practical.

- o Security/privacy: The individual applications determine security requirements.

- o **Response time:** Application response time requirements will vary widely but data entry should be validated as early as practical and the user given the opportunity to correct the error as quickly as possible, depending on the data knowledge of the person entering the data. For example, a data entry clerk will not know if an engineering load factor is correct or reasonable so the system should not request confirmation from the clerk for this data.

- o **Interfaces:** Data should be entered once and any sharing of that data with other systems should be automated.

- o **Reliability:** Reliability requirements will be determined by the individual application.

Major programmatic inputs: N/A

Major programatic outputs: N/A

Use of existing system: N/A

Growth factors:

- o As BLM increases the systems they use to support their mission, the data required to operate those systems will also increase and with that data entry will also increase. If BLM fails to coordinate the development of these new systems, data entry could grow at two or three times the rate of data collection due to duplicate data entry.

<<< BLM-Wide Functional Requirement >>>
<<< and Required Characteristics >>>

Technology Coordination

Part 1: General Information

Associated Program:	All BLM programs
User Organizations:	All BLM locations, but emphasis at the District Offices and Resource Areas
Owner/Operator/Maintainer:	WO, DSC, and the State Offices
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

As BLM acquires additional technology, coordination of this technology is going to become an increasingly important issue. This coordination includes not only ADP hardware and telecommunicaitons but software acquisition and development; and data management tools as well.

BLM currently has coordinators for telecommunications and for fire technology in the Washington Office. Each State Office has a telecommunications manager (some part-time) responsible for the State network to all the District Offices and Resource Areas. District Offices have staff with colateral responsibilities for the District radio network.

Another challenge to coordination of technology within BLM is the blurring distinction between Office Automation and ADP. BLM currently has a word processing contract in place which allows acquisition of Wang PC's as word processing work stations. As more ADP equipment can be used for word processing and more word processing can be used for ADP, someone must decide which will be used for what purpose in order to maintain control. This is a difficult decision and not getting easier.

Software development does not appear to be well coordinated across BLM, particularly State Office coordination with DSC. Systems having similar functionality are being developed in different locations, such as the APPS system in Colorado and the APPS system developed by DSC.

Coordination of data administration will need to be expanded to accomodate the larger volume of data maintained in the field and the increased number of systems exchanging or sharing data.

To support the technology coordination function, BLM information systems should provide capabilities to inventory current technology in use at BLM; identify characteristics of that technology which are interrelated, such as a terminal function key which is required for certain software features to be operational; provide standard data administration tools, such as a data dictionary; and provide standard system development tools to encourage consistent systems.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** No pressing deadlines associated with this function.
- **Security/privacy:** Data should be tamperproof but no unusual security requirements.
- **Response time:** There are no stringent response time constraints.
- **Interfaces:** Technology coordination must be closely tied to the ADP systems planning process.
- **Reliability:** Normal business standards for reliability would be sufficient.

Major programmatic inputs:

- State and District Office technology profiles including telecommunications, hardware, and software (both existing and under development).

Major programatic outputs: Technology guidelines and standards

Use of existing system: N/A

Growth factors:

- o The growth in systems development activity at the State and District Offices and the planned investment by BLM in additional ADP equipment increase the need for effective coordination both in acquisition of the appropriate technology and in proper utilization of the technology acquired.
- o Pressures to reduce administration, such as Reform 88, are forcing more reliance on ADP. Effective ADP relys on standarization and coordination.

<<< BLM-Wide Functional Requirement >>>
<<< and Required Characteristics >>>

ADP Training

Part 1: General Information

Associated Program:	Most BLM operational and support programs
User Organizations:	All organizational levels
Owner/Operator/Maintainer:	Locally maintained at State Offices, data entry at the District Office and above
Existing Automated System:	Washington Office Phoenix Training Course Catalog; State Office Training Tracking Systems on the Denver Service Center DPS-8 on ASPEN; Oregon Wang-PC Training Tracking System

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Part 2: Description of Overall Program, Requirement, and Current Procedures

ADP training was mentioned by every level of the BLM organization and in every operational program. Especially given BLM's intentions of acquiring new technology to modernize their systems, ADP training is going to have a major impact on BLM's ability to utilize its new systems. Part of the emphasis on training may require the purchase of systems products specifically designed to reduce training requirements or facilitate training.

ADP training determines how effectively the ADP systems are used. All training in BLM, regardless of subject matter, is tracked at the State Office to determine if staff are being properly developed and training funds properly spent.

Training is conducted in three separate tiers: bureau sponsored training at the BLM Training Center, State Office sponsored bureau-wide or state-specific training at the State Office, and District-sponsored training at the State Office, usually in the form of video centers.

Limited computer-assisted training is available. The Denver Service Center provides ten computer-assisted training courses.

The Performance Evaluation Branch in the Washington Office is reponsible for training bureau-wide, including ADP training. BLM Washington Office provides the Office of Personnel Management (OPM) with an Annual Training Report and an Annual Incentives Award Report for BLM.

The BLM Training Center is located in Phoenix. The Washington Office maintains a training catalog of courses offered by Phoenix using ASPEN on the Denver Service Center DPS-8. State Offices also contribute training information. This system contains the name of the course, the trainees, and the date it was conducted. The States do not have access.

The extent of state office training, training records, and training priorities varies widely from state office to state office. Some state offices have good training plans, some have partial or tentative plans, and some have no plan whatsoever.

Some of the State Offices, such as Colorado and Montana, have ASPEN training data bases at DSC and maintain their training plan and nominations for training there. These can be extensive. For example, Montana uses their system to track per diem, travel, and tuition costs associated with training for each person in each course as well as attendance. Each student generates a new record for each course they take. Other states, such as Oregon, maintain their training records on Wang-PC's using PC-DBMS software such as Condor or Revelation.

In every State, District, and Resource Area visited, ADP training was mentioned as a major concern. Even in field offices with little current capability, the staff were concerned that little training would be made available. Additional equipment without training is not very useful to them. ADP-specific training has an immediate impact on the effectiveness of ADP systems in the hands of users.

BLM field staff frequently receive software or access to software for which there is no training made available and no documentation on how to use the system. For example, we were told that the Automated Personnel Property System arrived in the Lewistown District Office in Montana without any prior notice and with no documentation on how to use it. In Oregon, some of the staff operating PAY/PERS have never received training. They have learned by trial and error. Since PAY/PERS is difficult for trained users to use and it also only catches one error at a time, lack of training is having a major impact on the staff's ability to perform well.

To support ADP training, BLM needs user-oriented software which requires less training, a program to raise computer awareness in the field, a method of developing training plans in a consistent format, identifying the training resources available and training requirements, and tracking training activity against training plans.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** Seasonal demand for training data entry, peaking at the beginning of the fiscal year.

  Annual Training Plan for BLM required by Office of Personnel Management.

- **Security/privacy:** Normal restriction of access to only Personnel Development staff would be satisfactory. No extraordinary security or privacy requirements.

- **Response time:** On-line response not necessary. Data is not volatile.

- **Interfaces:** Training availability system maintained by Washington Office should be linked to State Office training tracking systems.

- **Reliability:** Normal business standards for reliability would be satisfactory.

Major programmatic inputs:

- State Office training plans - SF 182's, including budget.
- Training materials and courses available

Major programatic outputs:

- Annual Training Plan
- Training progress reports

Use of existing system:

- **Number of users:** For ASPEN Training Tracking System, less than 70 with approximately 50 being data entry. The Training Catalog for the Washington Office has few users all in WO.

- **Amount of use:** Each State generates between 75 and 200 records with peak data entry occuring in the fall at the start of the fiscal year.

  The Oregon Wang-PC system has a similar data entry pattern but more records than most states due to their higher staff level.

- **Distribution by office:** A catalog of courses is used by the Washington Office. ASPEN Training Tracking applications are used by some States with data entry at State and District Office levels. A Wang-PC system is used by Oregon State Office.

Growth factors: Training will be required for the equipment and software acquired from outside vendors as well as custom-BLM applications developed in the field and at DSC.

Implementation of new ADP equipment and the development of software by field personnel of general use to other field offices is creating a serious need for ADP-specific training. This will become even more serious as the new system is procured and implemented and as field personnel learn about the ADP resources available to them.

Part 4: Existing System

Name: State Training Tracking Systems (Colorado, Montana)

Location: Denver Service Center

Hardware: Honeywell DPS-8/70

Software: ASPEN

Telecommunications: BLM Network

Name: Training Catalog System

Location: Denver Service Center

Hardware: DPS-8/70

Software: ASPEN

Telecommunications: BLM Network

Name: Oregon Training Tracking System - PC Based

Location: Portland, Oregon

Hardware: Wang-PC

Software: Condor

Telecommunications: N/A

<<< BLM-Wide Functional Requirement >>>
<<< and Required Characteristics >>>

Management Ad Hoc Query

Part 1: General Information

Associated Program:	BLM Management
User Organizations:	WO, DSC, State Offices, occasionally District Offices
Owner/Operator/Maintainer:	DSC and State Offices
Existing Automated System:	None

Part 2: Description of Overall Program, Requirement, and Current Procedures

BLM management and their external liaison groups (Public Affairs, Congressional Affairs, and Legislation and Regulatory Management) are often asked questions concerning current BLM operations. These questions often require summation of data within a certain geographic region or a certain time frame.

To answer these questions currently, the external liaison groups call the State Offices who call whatever organizations they need to call to gather the information, sometimes the Resource Area. These calls tend to take a lot of time because the line may be busy or the person must call back. Once the information is gethered it may be mailed or read over the telephone, depending on the urgency of the request. The field staff feel this occupies a lot of time gathering information which should be readily available.

To support this functional requirement, the BLM information systems must provide the capability to aggregate BLM operational data easily to answer unstructured questions. This capability may be provided to managment directly or to their staff. Also, reliable communications between the field and State Office and WO for both data and documents must be provided.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The Schedule will depend on the individual request but "same day" deadlines are common.
- **Security/privacy:** Queries may involve sensitive personnel or financial issues so security comparable to commercially available personnel systems is required.
- **Response time:** Response times will vary by request but some will require immediate (3-5 second) response time.
- **Interfaces:** This system will need to interface with the personnel, financial, and public land statistics systems.
- **Reliability:** Normal business standards for reliability will be sufficient.

Major programmatic inputs: Outside or managerial queries.

Major programatic outputs:

- Reports or verbal answers corresponding to the request.

Use of existing system: N/A

Growth factors:

- BLM intends to try and improve their public image. This effort will generate more ad hoc query activity. Also, if a supporting system is developed, the existence of the system will generate more activity.

<<< BLM-Wide Functional Requirement >>>
<<< and Required Characteristics >>>

Legal Land Coordinates

Part 1: General Information

Associated Program: All BLM operational programs

User Organizations: All BLM operational programs

Owner/Operator/Maintainer: Cadastral Survey and DSC

Existing Automated System: ORCA, Case Recordation, Geocoordinate Database under development, GIS

Part 2: Description of Overall Program, Requirement, and Current Procedures

Most BLM activities are based around legal land coordinates as determined by cadastral surveys. Plats, supplemental plats, resource maps, and resource map overlays are used in almost every program and at every field office level for referencing or updating resource or legal land characteristics. Resource maps and map overlays are the basis for the Resource Management Plans that must be referenced before an decision can be made. Any decision on the land must be recorded on the plats or supplemental plats within ten days of the action. Efforts to simplify map production, reference, or update would have wide applicability.

BLM has recognized this similarity in their programs. The ORCA and Case Recordation systems are attempting to provide a mechanism for Lands and Renewable Resources and Minerals program staff to share case tracking information which contains legal land descriptions as a component. These primarily address case processing and legal characteristics of the land. They do not address the resource characteristics of the land.

The Denver Service Center is developing a Geocoordinates database which will contain the legal coordinates for each BLM tract and be shared by BLM systems in the various programs. It is still in the early stages of development. Some field staff feel that these basic boundary descriptions should be the common base shared by their supporting systems. One staff member described it as a triangle with the common coordinates acting as the base for the two legs: Geographic Information Systems (to illustrate resource information) as one and the Automated Land Management Recordation system (case tracking and land status information) as the other.

To support the legal land coordinates requirement, BLM information systems must provide a common frame of reference for all systems associated with land actions or research and provide easy access to this frame of reference by all systems. This frame of reference must be consistent with the legal boundaries as determined by the cadastral surveys for BLM tracts.

Part 3: Sizing and Performance Requirements

Performance requirements:

- **Operating schedule/deadlines:** The legal land coordinates must be available for reference at all times.

- **Security/privacy:** The data is not necessarily sensitive but must be tamperproof since it will be the basis for important, legal decisions.

- **Response time:** The coordinates should be available on-line primarily for ADP system use.

- **Interfaces:** The land coordinates will be the basis for ADP systems developed to support the programmatic staff (such as ORCA) and must interface with them.

- **Reliability:** Normal business standards for reliability should be sufficient.

Major programmatic inputs: cadastral survey coordinates

Major programatic outputs:

- Common frame of reference for legal and resource characteristics systems.

Use of existing system: N/A

Growth factors:

- As BLM gains more experience with the Resource Management Plan process, BLM will have a larger knowledge base from which to make legal decisions (such as whether an oil and gas lease can be issued). Also, increased public awareness and scrutiny of activities on the public lands are likely to increase the factors pertaining to a particular decision rather than lessen them. These two condiitons will increase the need for BLM to coordinate their data on individual tracts of land more effectively in the future.

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